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THE

GARDENERS' CHRONICLE

A Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS

(ESTABLISHED IN 1841.)

VOL. LXXVII.—THIRD SERIES.

JANUARY TO JUNE, 1925.

LONDON
5, TAVISTOCK STREET, COVENT GARDEN, W.C.2.
1925.

341616

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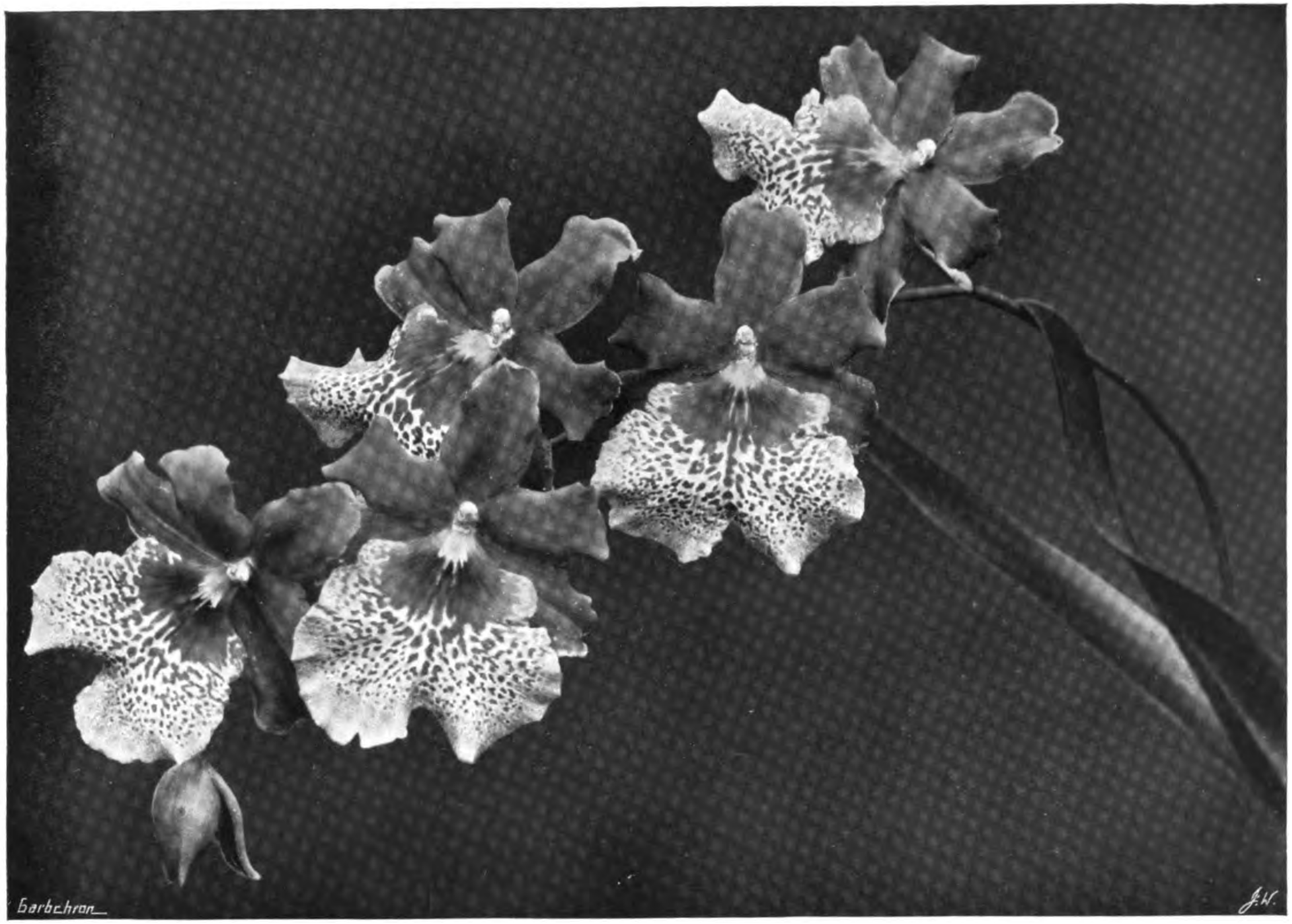
Rhododendron hippophaeoides (February 7)
Rose Shot Silk (February 21)
Stuartia malachodendron (June 6)
Vuylstekeara Aspasia var. polysticta (January 3)


Garbchron
J.W.

VUYLSTEKEARA ASPASIA VAR. POLYSTICTA.

THE
Gardeners' Chronicle

No. 1984—*SATURDAY, JANUARY* 3, 1925.

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SUPPLEMENTARY PLATE.

Vuylstekeara Aspasia var. polysticta.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 37·9.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 31, 10 a.m.: Bar. 29·8 temp. 42°. Weather, Rainy.

1924.

WHILST 1924 was no *annus mirabilis* so far as horticulture is concerned, gardeners have cause to be satisfied with the results of their labours during the twelve months, and with the steady progress of their craft in all directions. Crops generally were satisfactory, although there was a deficiency of certain kinds of fruits and Potatos suffered from late blight to a greater extent than usual. Ornamental berry-bearing trees and shrubs produced an unusual wealth of fruits and thus added greatly to the attractiveness of gardens in late autumn. The great exhibition at Wembley overshadowed all other events in the United Kingdom, and, indeed, in the Empire; it included some notable horticultural exhibits, as well as of forestry and agriculture. Numbers of colonial horticulturists were attracted to this great Empire exhibition, and many of these, as well as numerous visitors from America and other countries, took the opportunity of visiting some of the more important gardens in this country where they saw, first hand, what they had only previously known by hearsay, the glory and beauty of our English countryside and homesteads. How far this great show affected our horticultural exhibitions it would be difficult to gauge, but we fear that some suffered in consequence, although the Chelsea show of the Royal Horticultural Society was as successful as usual and, being favoured by fine weather, attracted enormous numbers of people during the three days it was open. The Shrewsbury Show was of the usual high standard of the Shropshire Horticultural Society's exhibitions, and the great flower show at York, popularly known as the York Gala, attracted many noteworthy exhibits, but this latter exhibition suffered a serious decline in attendance, so much so that the society is seriously considering whether to hold an exhibition as usual in 1925. The shows at Glasgow and Aberdeen reached a high standard of excellence. But the most remarkable floral event of the year was the great initial show held af Southport in August; for an exhibition of this importance to gain success at the first effort is indeed remarkable and a fine testimony to the splendid organisation and capabilities of those responsible, and proved conclusively that flower shows are still popular in this country. That this is true is seen in the success which attended the fortnightly meetings of the Royal Horticultural Society, for whilst in the past some of these shows—notably the spring exhibitions, were filled to overflowing with an appreciative concourse of visitors, at certain times of the year they were very sparsely attended, whereas now all these fortnightly exhibitions, even in mid-winter, attract large numbers of horticultural enthusiasts. Nothing more remarkable has been seen in the history of horticulture than the increase in the membership of the National Rose Society; for a society concerned only with one special flower to have increased its membership by over two thousand during a single year would have been regarded as little short of marvellous by the older florists! Good progress has also been made by the other special floricultural societies, the National Chrysanthemum Society and the British Carnation Society, and notably by the National Dahlia Society, which has not only increased its membership and held a splendid exhibition, but for the first time for many years has a substantial balance in hand. Adverting to the Royal Horticultural Society, everyone will agree that the severance of the special fruit and vegetable shows from the Holland Hall exhibition was a step in the right direction, for, more than any other type of exhibition, these two shows especially attract professional gardeners, who take a greater interest in prize produce and in the skill of their fellow craftsmen as demonstrated on the show board, than does the general public. The special competitive classes for Orchids arranged by the Council of the Royal Horticultural Society for amateur growers at two of the fortnightly meetings, met with unqualified success, the more so because they attracted large exhibits from traders, so that the pick of collections, both amateurs' and professionals', were on view at one and the same time. The Orchid societies at Manchester continue to do much useful work and the newly-formed Orchid Club has, we hope, a long and prosperous career before it. The numerous plant-collecting expeditions to the far East in recent years has resulted in a steady flow of fine novelties that are enriching our gardens with a wealth of fresh material. The number of new plants certificated by the Royal Horticultural Society is an index of the progress made in this direction, and by hybridists. Rhododendrons have figured conspicuously in the lists of awards and this genus seems as fertile in new species as did the genus Primula a few years ago. We are indebted to Lady Aberconway, Mr. T. H. Lowinsky, and other amateur enthusiasts, as well as to such traders as Messrs. R. Gill and Sons, Messrs. Waterer, Sons and Crisp, and Mr. G. Reuthe for the opportunity they have afforded the public of seeing many novelties—introductions and hybrids — amongst these beautiful flowering shrubs. We are also indebted to the Hon. Vicary Gibbs for the fine displays of trees and shrubs at the R.H.S meetings from the rich collection at Aldenham House Gardens, and these exhibits have included many beautiful berried species that serve to make the garden attractive in late autumn. All garden lovers are glad to know that Mr. F. Kingdon Ward is again engaged in plant-collecting, the present expedition being his eighth, and from the account he is contributing to these pages it will be seen there is plenty of fresh material for our gardens in the vast Chinese Empire and its hinterlands. A sign of the times is the co-ordination of market growers in their endeavours to find new and improved methods of cultivation and means of overcoming insect pests and diseases. Work that is being carried out by such organisations as the Lea Valley Nurserymen and Growers' Association is sure to have a great influence on commercial horticulture, and in this connection we may also point out that the British Florists' Federation has established a Floral Committee for adjudicating on the merits of flowers from the market growers' standpoint. A joint committee of the two last-named societies is engaged in the useful business of ascertaining the best and most economical methods of heating commercial glass-houses, and has recently published a preliminary report of its proceedings. Much valuable work is also being done by the Chamber of Horticulture, which has a wide range of activity, and concerns itself not only with trade affairs, but also with such items of general interest as railway charges, which affect private gardeners as well as nurserymen and market growers. The holding of the annual conference of the Fédération Horticole Professionnelle Internationale in May was made the occasion for returning in a slight measure the hospitality afforded by foreign horticulturists to British gardeners attending conferences and similar functions abroad, and no one can doubt but that such international courtesies have a great influence on trade between one country and another. All horticulturists will be delighted to observe the great spread of public gardens, for municipalities are realising more and more the influence public parks and gardens have on the public health, and that parks and open spaces are sources of pleasure and recreation to all members of the community. The output of gardening books during the year has far exceeded that of any other since the war and we think that the quality of the majority of the latest works shows an improvement on that of the past few years. In so far as the Gardeners' Royal Benevolent Institution is concerned, 1924 will long be a red-letter year, for the amount raised in the past twelve months for distressed gardeners and their widows has, thanks largely to the unprecedented success of the annual festival dinner at the Guildhall, under the chairmanship of H.R.H. The Prince of Wales, constituted the largest in the history of the Institution. We are glad also to know that the Royal Gardeners' Orphan Fund has had a successful year and that its income in 1924 exceeded that of 1923. The past year has left horticulture poorer by the deaths of many notable gardeners; the passing of Sir Harry Veitch was mourned by gardeners everywhere, for he was indeed the "grand old man" of horticulture as well as a worthy gentleman. We have to mourn also the deaths of many other prominent horticulturists, including Mr. R. P. Brotherston, Mr. Sydney Morris, Mr. James Sweet, Mr. H. Morgan Veitch, Mr. Brian Wynne, Mr. William Blaxill, Mr. James Britten, Mr. John Dunn, Dr. W. Botting Hemsley, Mr. R. Irwin Lynch, Mr. R. A. Malby and Mr. Anthony Waterer, all of whom played a conspicuous part in contemporary horticulture.

Our Supplementary Plate. — Vuylstekeara Aspasia var. polysticta, the subject of the Supplementary Plate presented with our first issue of 1925, is one of the finest Orchids exhibited before the Royal Horticultural Society during 1924. Raised and exhibited by Messrs. Charlesworth and Co., of Haywards Heath, it is the result of crossing Miltonia Charlesworthii with Odontioda Charlesworthii, and therefore a trigeneric hybrid, combining the genera Miltonia, Odontoglossum and Cochlioda. The variety polysticta has dark crimson sepals and petals, a rounded, crimson-based lip with a blush-white frontal portion, and a plentiful sprinkling of Rose-purple spots.

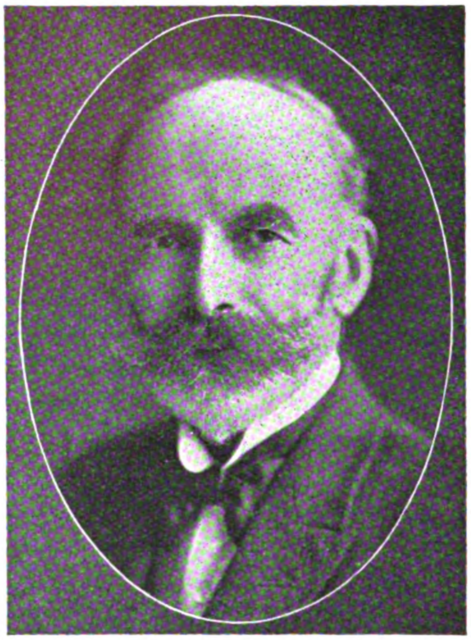
Kew Gardeners' Social Evening.—The annual social gathering of Kewites will be held at at the Kew Pavilion, Kew Green, Surrey, on January 8. As is usual, the arrangements are in the hands of a committee of present Kew men, but all old Kewites who can make it convenient to attend will receive a hearty welcome.

The King's Gardeners.—With the New Year Mr. C. H. Cook enters upon his new position as gardener to His Majesty King George, at Windsor. For many years Mr. Cook has been gardener to Lord Derby at Knowsley House, Prescot, where his extensive duties have fitted him for the high position on which he now enters in succession to Mr. A. MacKellar, who retires under the age limit imposed upon those who serve royalty. We offer our congratulations and good wishes to Mr. C. H. Cook and also to Mr. A. MacKellar, and express the hope that the latter may be spared to enjoy a long period of health and happiness in the retirement he has richly earned after very many years of faithful service, first at Sandringham and then at Frogmore. In our issue of December 15, 1923, we gave a portrait and appreciation of Mr. MacKellar. By the new appointment two brothers become royal gardeners, Mr. C. H. Cook at Windsor and Mr. T. H. Cook at Sandringham.

A Paris Appointment.—Three candidates have been chosen to take part in the forthcoming competition for the position of principal gardener of the City of Paris, namely Messrs. Duvernay, Vautrin, and Legras.

New Entomological Publication.—In January a new German monthly is to be published under the title of *Anzeigur Fuer Schaedlingskunde*, the organ of the German Institute for applied Entomology, which will deal with insect pests of all kinds of trees, flowers, fruits, etc. The publishers will be Paul Parey, Berlin, and the editors Professors Escherich and Stellwagg. It will be interesting to see whether a journal of this sort receives sufficient encouragement to continue publication indefinitely, as we are doubtful whether such an experiment would be successful in this country.

Professor R. Newstead, F.R.S.—It is with peculiar pleasure that we present our readers with a portrait of a gentleman who rose from the position of gardener in a private establishment to become a university professor. Many years have passed since Professor Newstead was gardener to A. O. Walker, Esq., at Ulcombe, Maidstone, in whose service he remained for several years and to whom Professor Newstead considers he owes more than to any other man he has met in his life, for it was Mr. Walker who started him upon his scientific career. In 1886 Mr. Newstead went to Chester to take up an appointment as Curator of the Grosvenor Museum, and in 1905 he was appointed special lecturer to the University and School of Tropical Medicine, Liverpool, and his office as curator of the Chester Museum was taken up by his brother, Mr. Alfred Newstead. He undertook the whole of the work of classifying and arranging the extensive collections of the Museum and also mounted and prepared practically the whole of the objects there. He also found time to do much excellent work in connection with the Chester Natural Science Society, and in due course was awarded the Kingsley Memorial Medal as a token of appreciation. Although the study of insects has claimed the larger share of Professor Newstead's attention, he is an archaeologist of no mean order, and in this connection has directed his studies especially to the Roman and Saxon periods and to prehistoric man. His knowledge of birds is also extensive and peculiar. In the earlier years during which he devoted attention to entomology he was closely associated with the late Miss Ormerod, and during the latter years of her life acted as her assistant, when he prepared an exhaustive index of the whole of her publications, which extended over a period of ten years. Gifted with a keen sense of observation and unusual powers of deduction, Mr. Newstead soon became famous, and in due course was appointed to the Dutton Memorial Chair of Entomology at the Liverpool School of Tropical Medicine, thus becoming the Professor of Entomology to the University of Liverpool. Professor Newstead's work has not been confined to insect pests that are destructive to crops in this country, but has been extended to practically all insects, and in particular to the Tsetse fly, a pest responsible for the death of untold numbers of cattle in tropical countries, and the source of the dreaded sleeping sickness among human beings. The newly-published work entitled, *A Guide to the Study of the Tsetse Fly*, written by Professor Newstead, in collaboration with Miss A. N. Evans and Mr. W. H. Potts, is the last word to date on this interesting but most pestiferous insect. One of the earliest of Professor Newstead's major investigations was made on behalf of the Liverpool Corporation, and this was into the subject of dissemination of disease by the common house fly. At a later date he formulated a scheme for [illegible] of rats on board ships, [illegible] are well-known carriers of bubonic plague. Before the war Professor Newstead was appointed a member of a commission sent to Jamaica to investigate a scab disease in cattle caused by a tick fly. His investigations proved eminently successful, and the ultimate result was the eradication of the pest from that island, for which he received the heartiest thanks of the Colonial Government. On another occasion he took part in an expedition to Nyassaland, organised by the Colonial Office of the Royal Society, in connection with investigations of tropical diseases, and he also went to Gibraltar to carry out researches in connection with the life history of the sand fly. Perhaps one of the greatest blessings Professor Newstead has conferred upon mankind was his important entomological work in connection with the sanitation of the British camps in France during the earlier years of the war, where he was able to establish means for the destruction of offensive insects, such as the blow fly, the house fly, and the stable fly, all of which appeared to take some part in the spread of dysentery among the troops. In 1914 he became a member of the Departmental Committee (Colonial Office) on sleeping sickness. After practically forty years of wholly scientific work, Professor Newstead is now retiring from his position as Professor of Entomology at Liverpool, but we understand that for some time to come he will be connected with the University, so that his long association will not be severed abruptly. All gardeners will join in congratulating Professor Newstead on the eminence he has attained in the scientific world, and will join with us in wishing him many years of health and happiness in which to carry on some of those special studies of which he is already a master.


PROFESSOR R. NEWSTEAD, F.R.S.

Wireless Telegraphy in the Bothy at Knowsley.—Through the kindness of Lord Derby, who is always mindful of the comfort and welfare of his employees, especially those who live away from their homes, a four-valve wireless set, with disc loud speaker has been installed in the bothy reading room at Knowsley Hall Gardens. Needless to state this has been very greatly enjoyed and appreciated by the young gardeners during the Christmas season. Lord Derby has also installed wireless sets in the various lodges and isolated houses on the Knowsley estate.

Awards to Roses Tested at Wisley.—Mr. F. J. Chittenden, Director of the Royal Horticultural Society's Gardens, Wisley, informs us that the Council of the Royal Horticultural Society has had under consideration the form of Certificate to be given when Roses obtain the Wisley Rose Award of the First-class, and has decided that a painting of the Rose to which the award has been given shall be made upon a suitably inscribed card and presented to the sender of the Rose to the trials—the sender being usually the raiser or introducer.

Appointments for the Ensuing Week.—Tuesday, January 6.—Royal Caledonian Horticultural Society's meeting. Wednesday, January 7.—Royal Agricultural Society of England Council meeting. Friday, January 9.—Royal Horticultural Society of Ireland Council meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*The Rose Garden at Hoddesdon.*—From Mr. William Paul's *Morning Rambles in the Rose Gardens of Hertfordshire* we select the following account of Mr. Warner's garden at Hoddesdon, in illustration of the clever way in which Mr. Paul manages his subjects: "The soil, although naturally loamy, was thought not sufficiently good, and the beds were originally filled with prepared soil. In the centre of the garden is a Rose temple. The ground on which it stands consists of four beds of equal size, segments of a circle, the soil being raised, to form a mound, about four feet high. Twelve Gothic arches, the standards of which are of iron, seven feet three inches high and six feet three inches apart, describe the outside of the circle. From these rise several rods, which meet at the top, and are united to a rod rising from the centre to form a dome. Two walks pass transversely through the centre of this temple, thus leaving four arches for ingress or egress. A seat surrounds the central support. Among the climbing Roses which covered the framework we observed—Macartney: Maria Leonida, creamy white—Hybrid Chinese: Fulgens, crimson; Bennus, light carmine; Sempervirens; Leopoldine d'Orleans, white tipped with lake; Princess Louise, creamy white—Noisette: La Biche, white, flesh centre—Multiflora: Laura Davoust, white to pink—Ayrshire: Ruga, flesh colour. In the same beds with the Climbing Roses were interspersed various dwarf hardy kinds on their own roots, to fill up the ground. Various beds surrounded the temple, which were planted with standard autumnal Roses, of which the following were the most striking: Bourbons: Cardinal Fesch, cherry crimson; Gloire de Rosomène, crimson scarlet; Le Grénadier, rosy purple; Phoenix, purplish crimson; and Bouquet de Flore, light carmine—Chinese: Gouvain St. Cyr, pink, and Eugene Beauharnais, armaranth—Tea-scented: Belle Allemande, pink tinged with fawn; Niphetos, pale lemon; Eliza Sauvage, cream and orange; and Bougère, deep salmon. There are three rustic figures mounted on pedestals introduced round the exterior with good effect. Beyond these is planted a hedge of dwarf Scotch Roses, over which we caught a glimpse of the lawn studded with various ornamental trees and plants. . . . The lawn is decorated with flower beds, among which single specimens of standard Roses are interspersed. We noted the following as the best: Boursault: Elegans, rosy crimson—Hybrid Bourbon: Coupe d'Hébé, pink; Las Casas, rosy pink—Bourbon: Queen, rose and buff; Madame Desprez, rosy lilac; and Cardinal Fesch, cherry crimson. The natural soil of this garden is gravel; consequently the flower beds are filled with prepared soil. A plant of the Cloth of Gold, which had occupied a south wall for three years, had never flowered. By the side of it grew the single Macartney, which flowered freely, and elicited general praise. A line of arches covered with Roses and Honeysuckles crosses the lawn, and produces a very pleasing effect. Maria Leonida (Macartney) and Leopoldine d'Orleans (Sempervirens) were trained over a seat, the branches drooping naturally from above with a careless grace, which art might in vain try to imitate. A small bed of the crimson Chinese Rose "Fabvier," its brilliant flowers glowing in the sun, was the last object to rivet the attention." *Gard. Chron., January* 5, 1850.

Publications Received.—*Shrubs of Indiana.* By C. C. Deam. Department of Conservation, Indiana, U.S.A.—"*The Fruit Grower*" *Directory and Handbook*, 1925. Benn Bros., Ltd., 8, Bouverie Street, E.C. 4. Price 10s.

FLORISTS' FLOWERS.

PERPETUAL-FLOWERING CARNATIONS.

THE splendid article by *Private Gardener* (p. 409, December 13, 1924) on the growth and management of the Perpetual-flowering Carnation is most opportune, as the propagating time is at hand. Every paragraph indicates the practical grower, and the whole article should be carefully studied by those who for some reason or other have not been as successful as they could wish with these most useful plants.

His expression at the commencement of his article, where he states there must be many who would be glad to exchange notes on this subject, will, I hope, induce others to write, as there are many points on which enlightenment is needed, and after all it is the personal experience such as *Private Gardener* evidently possesses that helps others. That this exchange of notes on the merits of varieties is needed there is evidence, because another writer (page 404) in the same issue states that although the variety Britannia is old it is still the finest flowering scarlet variety. My experience of this variety during recent years is that it is very unsatisfactory. The blooms are small, the colour is not what one could honestly call scarlet, and there are several very fine varieties of this colour to choose from, all superior in every respect to Britannia. Foremost amongst these I would mention Lord Lambourne, a free-flowering variety of good habit, with bright scarlet flowers, slightly fringed; another good scarlet is Tarzan, with a strong, vigorous growth and fine, long, stems. Thor has provided us with some of the most perfect blooms I have ever seen outside the great London shows this autumn. One more variety in the same colour I am trying this year is Edward Allwood; the colour is superb, but, so far, the plants have a tendency to lankiness and do not produce a superabundance of those side-shoots which marks the true perpetual-flowering variety. This may be in a measure remedied in time, as one gets better acquainted with its needs, as it is a variety worth taking some little trouble with. These four varieties, together with a seedling raised here last year (and of which more anon), are in my opinion superior in every way to the older variety mentioned. *A. T. Harrison, Culzean Castle Gardens.*

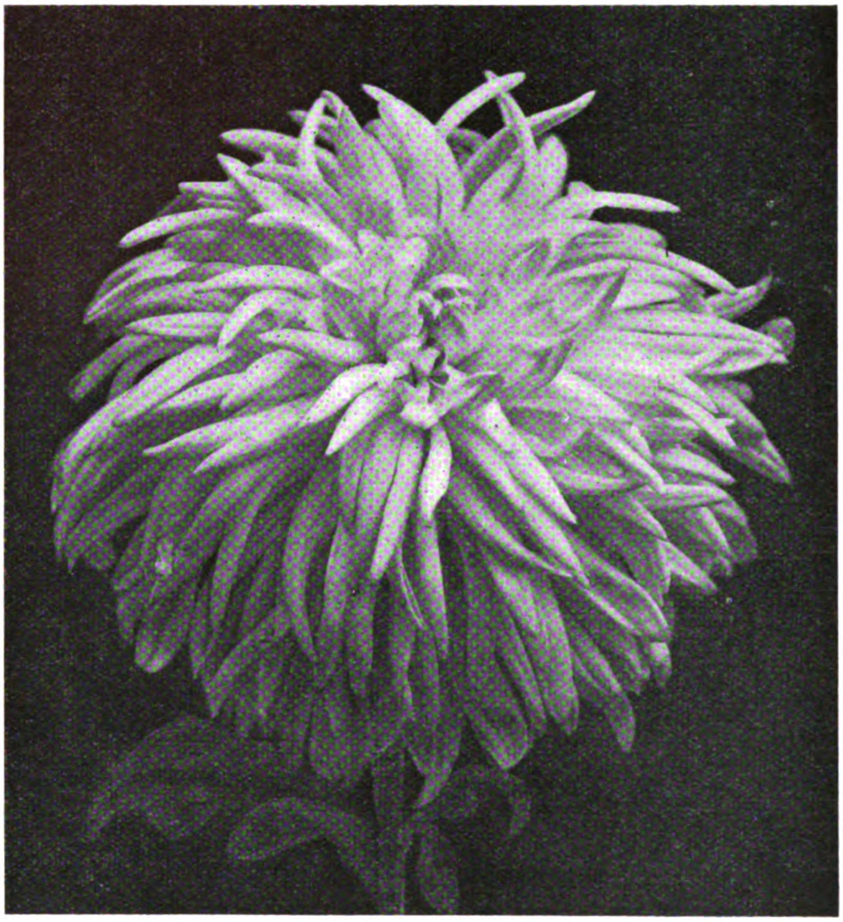


FIG. 1.—CHRYSANTHEMUM BALCOMBE BEAUTY.

R.H.S. Award of Merit, December 16, 1924; N.C.S. First-Class Certificate, December 15, 1924.

CHRYSANTHEMUM BALCOMBE BEAUTY.

In a season such as we have just experienced, when, owing to comparatively mild weather, Chrysanthemums developed quickly and have been somewhat poor in texture, late varieties have proved very acceptable, and one of the newest additions to this section is Balcombe Beauty (Fig. 1), a variety which was shown before the Floral Committee of the National Chrysanthemum Society on December 15, when it received a First-Class Certificate, and was further honoured when, on the next day, it was granted an Award of Merit by the Royal Horticultural Society. It is a flower of great beauty and form, and the colour is a rich, deep, golden yellow.

The Week's Work

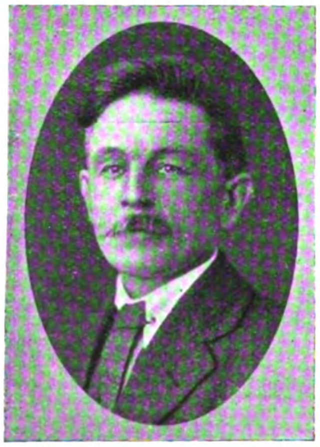
THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Management of the Hot-Water System.—The present time may be termed the middle of the resting or slow-growing season for Orchids, but even in the coolest division a little fire-heat should be used at all times. Air should be admitted in accordance with outside conditions, as ventilation with fire heat is preferable to keeping the house closed without artificial warmth. In advising this I am aware that more Orchids are injured by the use of excessive fire-heat than from any other cause. Therefore, exercise the greatest care in the management of the hot-water system at all times. Frequently too little piping is provided, which causes a dry, burning atmosphere in the house, whereas with more pipes the heat may be modified, with great advantage to the plants. The extra cost of the pipes is small in comparison with the cost of fuel in endeavouring to maintain the requisite temperatures with too little heating surface.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.



Preparation.—In the New Year the first signs of lengthening daylight become noticeable. Work in the garden at this season is largely influenced by climatic conditions, but it is essentially a time of preparation for the more active season ahead. The work of draining, trenching, digging and manuring of ground intended for spring planting should be pushed forward so that the future occupants will find ideal conditions when planting time arrives. Ground that is to be occupied by annuals should not be heavily manured or, if in fairly good condition, not at all, but that in which Chrysanthemums, Hollyhocks, Dahlias and Pentstemons are to be grown should be liberally treated.

New Year Flowers.—Comparatively few flowers bloom out-of-doors in the dead of winter. The beautiful winter-flowering Iris unguicularis never fails to give us colour at this season when planted in warm positions at the foot of a south wall. If slugs can be combatted the grower can always rely on finding Christmas Roses now. It rarely happens that sprays of the beautiful Erica mediterranea hybrida may not be gathered at the New Year and in favoured localities, in the south, at any rate, early January sees the Witch Hazels in flower. These shrubs, with their slender branches clad with quaint but handsome pale yellow flowers, are objects of great beauty in the shrubbery and no garden should be without them. Chimonanthus fragrans gives a profusion of its yellow and purple flowers from midwinter onwards and fills the surrounding air with its delicate fragrance. On the remarkable Grevillea rosmarinifolia one may be certain to find expanded flowers at midwinter as well as at midsummer and frequently also on its congener, G. sulphurea. The sweet-smelling Petasites fragrans is now in bloom, and although the flowers are not very ornamental they pervade the air with fragrance.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Introductory Remarks.—The best advice I have to offer all fruit growers is thoroughness in all work and attention to small details. Cleanliness is absolutely essential for the production of choice fruits in and out of season. The heating apparatus should be in good order, valves cleaned and their workings thoroughly understood. The supply system should be cleaned, and soft water used whenever possible. Air cocks should be tested daily, stokeholes whitewashed and kept as clean as the houses. All soils should be kept under cover of an open shed; artificial and chemical manures in a very dry shed and heated with pipes for preference and under lock and key. Use manures and insecticides strictly according to the directions of the makers.

The Early Vinery.—The vines in the early vinery having been pruned and thoroughly cleansed they may now be started. Ascertain the condition of the border and if water is required give the soil a good soaking with tepid water; where plants have been housed in vineries the border will generally be moist enough. Spray the vines overhead, also the back walls during fine weather; maintain a temperature of 45° at night and 50° by day. Ventilate the vinery carefully, avoiding all draughts. When temporary staging is used for plants, etc., see that bricks are used to stand the supports on and that no wood touches the soil. Strawberries required to furnish ripe berries at Easter should be placed on the back shelves. See that the drainage is efficient and the pots free from worms; where the latter are present give one watering with clear, tepid lime water. Fumigate the house if there is any sign of green fly.

Hot Beds.—Prepare a good quantity of tree leaves, three parts, and one part of long straw manure for the making of hot beds for the growing of Cucumbers, Melons, etc. Sow seeds of a good variety of Tomato for early use, according to requirements.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Forewords.—Growers of plants requiring the protection of glass houses will do well to consider carefully and to determine just what quantities of the different subjects which they wish to produce, can, after taking into account the space and facilities at command, be grown successfully, thus economising space, material, and labour. Overcrowding is seriously detrimental to the growing of good plants, yet the plantsman, is often inclined to err in this direction. It is better to possess fewer well-grown plants than to have a surfeit of second-rate specimens which have been allowed too little space to grow in. When adding new and improved varieties to the stocks of plants usually grown there should be a corresponding reduction in the numbers of the older or less desirable varieties.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Planting.—Where the planting of fruit trees has been delayed by heavy rains, the work should be completed, when the weather is favourable, with all possible speed. In planting Apples and Pears on heavy soil, it is a good practice to plant on the ground level and earth up the roots accordingly. Before planting, the ground should be well dug two spits deep and incorporated with plenty of material that will render the texture open, such as old mortar rubble, screenings from the rubbish heap, and any kind of ashes. Before planting examine the roots and cut off all damaged ones to sound tissue, also shorten the strong growing ones; use a sharp knife to ensure clean cuts. When planting carefully lay the roots in position before covering them with soil, which should be very carefully applied and well worked amongst the roots; give the tree a good shaking to settle the soil in position before treading it to make the roots firm. In exposed positions it will be necessary to put a strong stake to each tree, placing soft material between the bark and stake, such as hay or straw bands. Tie the tree firmly to the stake, at the same time allowing room for the stem to swell. In staking bush trees I make it a practice to put the stake obliquely in the ground on

the north-east side at an angle of 45°, the top of the stake pointing south-west. This system of staking prevents the bush from moving either way when a gale is blowing, and does not allow a hole to be made in the ground close to the stem.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Seed Order.—If the list of seeds necessary for the coming season has not already been made out let this be done at once and sent to a reliable firm, as now that January has arrived the seeds should be ordered. When the seeds arrive they should be stored in a dry place, safe from the attacks of mice. It is well worth while now, and will save valuable time in the busy season, to place each lot of seeds by themselves and the varieties in the rotation they will be required for sowing.

General Remarks.—Take every opportunity of frosty weather whilst the ground is hard to wheel manure on land bare of crops, and also undertake all wheelbarrow work that can be done at this date in the kitchen garden. The work of trenching and digging should, wherever possible, be pushed on with so as to ensure that the freshly dug ground shall derive as much benefit as possible from frosts, etc.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE Lowther Castle, Penrith, Westmoreland.

East Lothian Stocks.—To obtain good plants for summer and autumn flowering it is essential that seeds be sown at once, as East Lothian Stocks require a long season of growth. Sow the seeds in good soil in pans or boxes; place them in an intermediate temperature, but when the young seedlings have shown their first pair of leaves they may be transplanted into other boxes or in frames and gradually hardened off as growth advances.

Verbena venosa.—In northern gardens where this useful subject is treated as an annual, seeds ought to be sown now. Good, bushy plants may be obtained by frequently pinching out the points of growth while the plants are growing in boxes.

Calceolaria, Pentstemon and Viola.—Frames containing cuttings of these subjects require careful attention during January. Stir the surface soil frequently, admit a free current of air whenever the weather permits, and on fine days the lights may, with advantage, be removed, taking care that they are replaced each evening. By this treatment they will make sturdy specimens that will transplant well when the proper time arrives.

Sweet Peas and Chrysanthemums.—Peas sown in the autumn ought to be kept cool and as close to the roof-glass as possible. A successional sowing may now be made in pots. Stools of early-flowering Chrysanthemums may be placed in gentle heat and propagated from so soon as cuttings appear. Keep the young plants in cool conditions to secure sturdy growth and avoid infestation by aphis.

Kitchen Garden.—The pruning of fruit should be finished so soon as possible. Proceed with the nailing and training of wall trees whenever the weather permits this operation to be performed with reasonable comfort. Seeds of a good early variety of Lettuce may be sown to produce plants for growing in frames. A small sowing may also be made of early Cauliflower and Cabbage; this is desirable because we may yet lose the autumn-sown plants if bad weather should occur.

Herbaceous Phloxes.—Propagation of Phloxes may be effected by lifting the clumps and placing them in gentle heat, when they will soon produce shoots. Cuttings made from these shoots are very easily propagated and root quickly in heat. When the young plants show signs of growth remove them to a cool frame and admit air whenever the weather is suitable. Particularly good plants may be had for bedding out if the trouble is taken to pot the young plants in a good and fairly strong soil. In due course they should be planted where they will receive full exposure to sun.

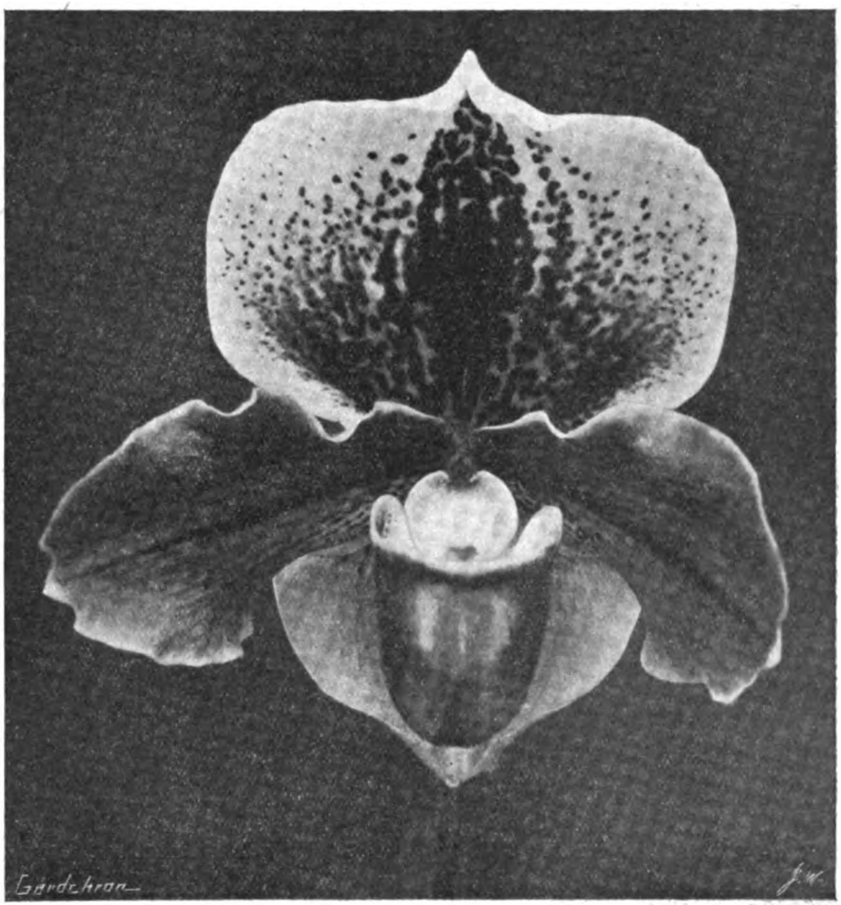


FIG. 2.—CYPRIPEDIUM PERSEUS.
R.H.S. First-Class Certificate, December 16, 1924.

ORCHIDS OF 1924.

DURING the past year the interest in Orchids has been well sustained. Hybridists, both amateur and professional, have given ample evidence of progress by the uniformly high quality of their exhibits and in the new hybrids registered, over three hundred and fifty having been included in the new Orchid hybrid lists published in *The Gardeners' Chronicle* during 1924, the number being slightly in excess of that of the previous year. The time when any Orchids in flower would serve as parents for crossing has passed and now-a-days novelties are generally the result of careful consideration and the use of pedigree strains.

For the exhibition and certificating of matured plants the Royal Horticultural Society is the centre for the south and the Manchester and North of England Orchid Society the centre for the north, and each does equally good work. Some of the members of these committees are members of the committees of both Societies and good exhibits are frequently displayed at the meetings of both societies by certain growers; for example, H. T. Pitt, Esq., one of the chief amateur exhibitors in London, occasionally shows at Manchester, his collection at Manchester last June being especially fine. A very welcome exhibit from a northern Orchidist at the Royal Horticultural Society was the fine group of Robert Paterson, Esq., of Glasgow, on December 2.

The Chelsea show, the exhibition at Holland Park Hall, the setting apart of certain days for special classes of Orchids, and the fortnightly meetings of the Orchid

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Management of the Hot-Water System.—The present time may be termed the middle of the resting or slow-growing season for Orchids, but even in the coolest division a little fire-heat should be used at all times. Air should be admitted in accordance with outside conditions, as ventilation with fire heat is preferable to keeping the house closed without artificial warmth. In advising this I am aware that more Orchids are injured by the use of excessive fire-heat than from any other cause. Therefore, exercise the greatest care in the management of the hot-water system at all times. Frequently too little piping is provided, which causes a dry, burning atmosphere in the house, whereas with more pipes the heat may be modified, with great advantage to the plants. The extra cost of the pipes is small in comparison with the cost of fuel in endeavouring to maintain the requisite temperatures with too little heating surface.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Preparation.—In the New Year the first signs of lengthening daylight become noticeable. Work in the garden at this season is largely influenced by climatic conditions, but it is essentially a time of preparation for the more active season ahead. The work of draining, trenching, digging and manuring of ground intended for spring planting should be pushed forward so that the future occupants will find ideal conditions when planting time arrives. Ground that is to be occupied by annuals should not be heavily manured or, if in fairly good condition, not at all, but that in which Chrysanthemums, Hollyhocks, Dahlias and Pentstemons are to be grown should be liberally treated.

New Year Flowers.—Comparatively few flowers bloom out-of-doors in the dead of winter. The beautiful winter-flowering Iris unguicularis never fails to give us colour at this season when planted in warm positions at the foot of a south wall. If slugs can be combatted the grower can always rely on finding Christmas Roses now. It rarely happens that sprays of the beautiful Erica mediterranea hybrida may not be gathered at the New Year and in favoured localities, in the south, at any rate, early January sees the Witch Hazels in flower. These shrubs, with their slender branches clad with quaint but handsome pale yellow flowers, are objects of great beauty in the shrubbery and no garden should be without them. Chimonanthus fragrans gives a profusion of its yellow and purple flowers from midwinter onwards and fills the surrounding air with its delicate fragrance. On the remarkable Grevillea rosmarinifolia one may be certain to find expanded flowers at midwinter as well as at midsummer and frequently also on its congener, G. sulphurea. The sweet-smelling Petasites fragrans is now in bloom, and although the flowers are not very ornamental they pervade the air with fragrance.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Introductory Remarks.—The best advice I have to offer all fruit growers is thoroughness in all work and attention to small details. Cleanliness is absolutely essential for the production of choice fruits in and out of season. The heating apparatus should be in good order, valves cleaned and their workings thoroughly understood. The supply system should be cleaned, and soft water used whenever possible. Air cocks should be tested daily, stokeholes whitewashed and kept as clean as the houses. All soils should be kept under cover of an open shed; artificial and chemical manures in a very dry shed and heated with pipes for preference and under lock and key. Use manures and insecticides strictly according to the directions of the makers.

The Early Vinery.—The vines in the early vinery having been pruned and thoroughly cleansed they may now be started. Ascertain the condition of the border and if water is required give the soil a good soaking with tepid water; where plants have been housed in vineries the border will generally be moist enough. Spray the vines overhead, also the back walls during fine weather; maintain a temperature of 45° at night and 50° by day. Ventilate the vinery carefully, avoiding all draughts. When temporary staging is used for plants, etc., see that bricks are used to stand the supports on and that no wood touches the soil. Strawberries required to furnish ripe berries at Easter should be placed on the back shelves. See that the drainage is efficient and the pots free from worms; where the latter are present give one watering with clear, tepid lime water. Fumigate the house if there is any sign of green fly.

Hot Beds.—Prepare a good quantity of tree leaves, three parts, and one part of long straw manure for the making of hot beds for the growing of Cucumbers, Melons, etc. Sow seeds of a good variety of Tomato for early use, according to requirements.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Forewords.—Growers of plants requiring the protection of glass houses will do well to consider carefully and to determine just what quantities of the different subjects which they wish to produce, can, after taking into account the space and facilities at command, be grown successfully, thus economising space, material, and labour. Overcrowding is seriously detrimental to the growing of good plants, yet the plantsman, is often inclined to err in this direction. It is better to possess fewer well-grown plants than to have a surfeit of second-rate specimens which have been allowed too little space to grow in. When adding new and improved varieties to the stocks of plants usually grown there should be a corresponding reduction in the numbers of the older or less desirable varieties.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Planting.—Where the planting of fruit trees has been delayed by heavy rains, the work should be completed, when the weather is favourable, with all possible speed. In planting Apples and Pears on heavy soil, it is a good practice to plant on the ground level and earth up the roots accordingly. Before planting, the ground should be well dug two spits deep and incorporated with plenty of material that will render the texture open, such as old mortar rubble, screenings from the rubbish heap, and any kind of ashes. Before planting examine the roots and cut off all damaged ones to sound tissue, also shorten the strong growing ones; use a sharp knife to ensure clean cuts. When planting carefully lay the roots in position before covering them with soil, which should be very carefully applied and well worked amongst the roots; give the tree a good shaking to settle the soil in position before treading it to make the roots firm. In exposed positions it will be necessary to put a strong stake to each tree, placing soft material between the bark and stake, such as hay or straw bands. Tie the tree firmly to the stake, at the same time allowing room for the stem to swell. In staking bush trees I make it a practice to put the stake obliquely in the ground on

the north-east side at an angle of 45°, the top of the stake pointing south-west. This system of staking prevents the bush from moving either way when a gale is blowing, and does not allow a hole to be made in the ground close to the stem.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Seed Order.—If the list of seeds necessary for the coming season has not already been made out let this be done at once and sent to a reliable firm, as now that January has arrived the seeds should be ordered. When the seeds arrive they should be stored in a dry place, safe from the attacks of mice. It is well worth while now, and will save valuable time in the busy season, to place each lot of seeds by themselves and the varieties in the rotation they will be required for sowing.

General Remarks.—Take every opportunity of frosty weather whilst the ground is hard to wheel manure on land bare of crops, and also undertake all wheelbarrow work that can be done at this date in the kitchen garden. The work of trenching and digging should, wherever possible, be pushed on with so as to ensure that the freshly dug ground shall derive as much benefit as possible from frosts, etc.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmorland.

East Lothian Stocks.—To obtain good plants for summer and autumn flowering it is essential that seeds be sown at once, as East Lothian Stocks require a long season of growth. Sow the seeds in good soil in pans or boxes: place them in an intermediate temperature, but when the young seedlings have shown their first pair of leaves they may be transplanted into other boxes or in frames and gradually hardened off as growth advances.

Verbena venosa.—In northern gardens where this useful subject is treated as an annual, seeds ought to be sown now. Good, bushy plants may be obtained by frequently pinching out the points of growth while the plants are growing in boxes.

Calceolaria, Pentstemon and Viola.—Frames containing cuttings of these subjects require careful attention during January. Stir the surface soil frequently, admit a free current of air whenever the weather permits, and on fine days the lights may, with advantage, be removed, taking care that they are replaced each evening. By this treatment they will make sturdy specimens that will transplant well when the proper time arrives.

Sweet Peas and Chrysanthemums.—Peas sown in the autumn ought to be kept cool and as close to the roof-glass as possible. A successional sowing may now be made in pots. Stools of early-flowering Chrysanthemums may be placed in gentle heat and propagated from so soon as cuttings appear. Keep the young plants in cool conditions to secure sturdy growth and avoid infestation by aphis.

Kitchen Garden.—The pruning of fruit should be finished so soon as possible. Proceed with the nailing and training of wall trees whenever the weather permits this operation to be performed with reasonable comfort. Seeds of a good early variety of Lettuce may be sown to produce plants for growing in frames. A small sowing may also be made of early Cauliflower and Cabbage; this is desirable because we may yet lose the autumn-sown plants if bad weather should occur.

Herbaceous Phloxes.—Propagation of Phloxes may be effected by lifting the clumps and placing them in gentle heat, when they will soon produce shoots. Cuttings made from these shoots are very easily propagated and root quickly in heat. When the young plants show signs of growth remove them to a cool frame and admit air whenever the weather is suitable. Particularly good plants may be had for bedding out if the trouble is taken to pot the young plants in a good and fairly strong soil. In due course they should be planted where they will receive full exposure to sun.

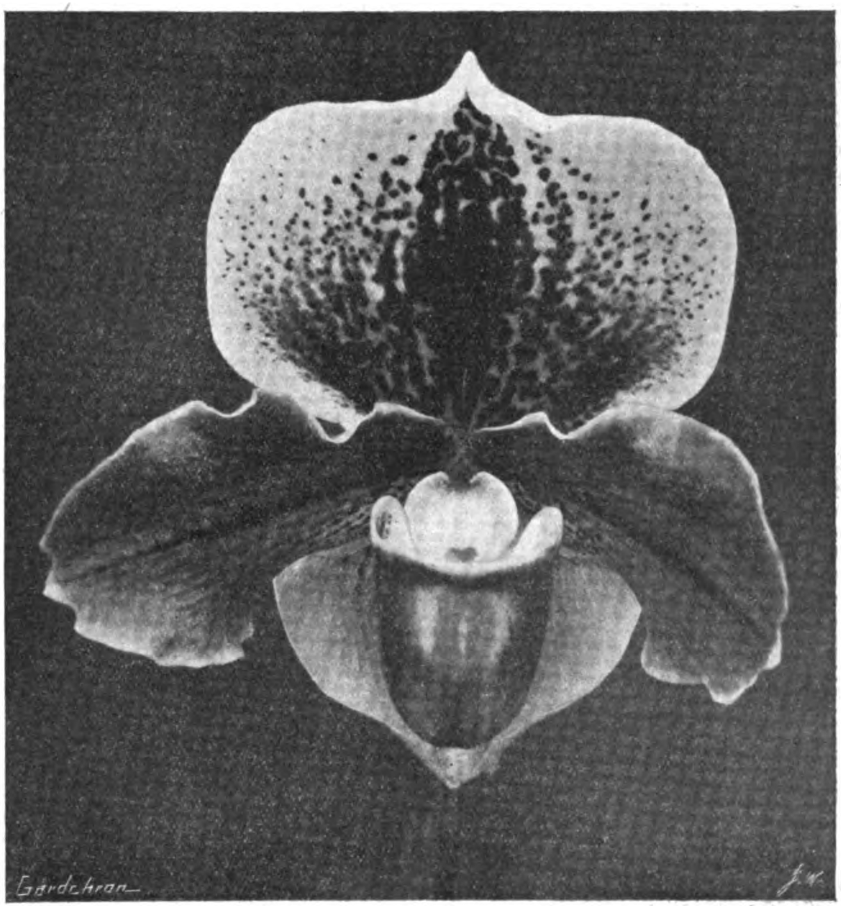


FIG. 2.—CYPRIPEDIUM PERSEUS.
R.H.S. First-Class Certificate, December 16, 1924.

ORCHIDS OF 1924.

DURING the past year the interest in Orchids has been well sustained. Hybridists, both amateur and professional, have given ample evidence of progress by the uniformly high quality of their exhibits and in the new hybrids registered, over three hundred and fifty having been included in the new Orchid hybrid lists published in *The Gardeners' Chronicle* during 1924, the number being slightly in excess of that of the previous year. The time when any Orchids in flower would serve as parents for crossing has passed and now-a-days novelties are generally the result of careful consideration and the use of pedigree strains.

For the exhibition and certificating of matured plants the Royal Horticultural Society is the centre for the south and the Manchester and North of England Orchid Society the centre for the north, and each does equally good work. Some of the members of these committees are members of the committees of both Societies and good exhibits are frequently displayed at the meetings of both societies by certain growers; for example, H. T. Pitt, Esq., one of the chief amateur exhibitors in London, occasionally shows at Manchester, his collection at Manchester last June being especially fine. A very welcome exhibit from a northern Orchidist at the Royal Horticultural Society was the fine group of Robert Paterson, Esq., of Glasgow, on December 2.

The Chelsea show, the exhibition at Holland Park Hall, the setting apart of certain days for special classes of Orchids, and the fortnightly meetings of the Orchid

Committee provide amply for the leading exhibitors at the R.H.S. As usual, Lt.-Col. Sir Geo. L. Holford, K.C.V.O., Sir Jeremiah Colman, Bt., Baron Bruno Schröder, H. T. Pitt, Esq., G. F. Moore, Esq., E. R. Ashton, Esq., and other amateurs responded well. The leading nurserymen exhibitors were Messrs. Charlesworth and Co., Messrs. Sanders. Messrs. Cowan and Co., Messrs. Armstrong and Brown, Messrs. Stuart Low and Co., and Messrs. J. and A. McBean.

Among the highest examples of floral excellence and cultural skill were Laelio-Cattleya Queen Mary, its variety Colossa, and the no less beautiful Westonbirt variety, selected from a score of grand specimens in the Gold Medal group exhibited by Sir Geo. Holford in October last for which the Silver-Gilt Lindley Medal was worthily awarded to Mr. H. G. Alexander, the grower. Other First-Class forms from Westonbirt were Laelio-Cattleya Imperatrix Regina, L.-C. Lustrissima Westonbirt variety, Cypripedium Crusader Westonbirt variety and C. Perseus (see Fig. 2). Six fine Cymbidiums also secured awards an the pretty, yellow Laelio-Cattleya Orange Blossom var. June.

Odontoglossums were shown at every meeting and certificates given. but curiously enough, in the opinion of many experts, the best Odontoglossum was the wonderful model white and clear yellow Odontoglossum Rêve d'Or shown by Messrs. Charlesworth and Co. that was not entered to go before the committee. It is of the same class as the superb O. Armstrongii shown by Messrs. Armstrong and Brown last year and again in still finer form this season. Odontoglossum crispum has always been and always will be a favourite and the pure white forms have been greatly improved. The three best white crispums of the year are O. crispum Evansiae, which gained a First-Class Certificate at Chelsea, the equally good O. crispum Pearl McBean illustrated in *The Gardeners' Chronicle* of June, 1924, one of the purest and most refined whites, and Messrs. Sanders' O. crispum Mary Gratrix which is perfect in shape and of fine substance.

The coloured Odontoglossums have had a hard fight to secure the highest award during the past year, the great number already certificated being a severe test. The same applies to all the other large sections. A broad view shows that, however complicated the lineage, those which show most of O. crispum in form and substance, and those showing the ancestry from O. Pescatorei, with its equally broad segments. are always in the front rank. An instance is O. eximium McBean's variety, a flower perfect in shape and tinted rich amethyst purple. O. Doreen variety D. A. Cowan, and O. Model, of J. J. Bolton, Esq.; O. Monarch, of Messrs. Cowan and Co., which gained the highest award at Chelsea; O. Felix, of Messrs. Stuart Low, and several novelties following their O. Purple Emperor class by Messrs. Charlesworth, are all worthy of special mention.

The collection of R. Gerrish, Esq., Milford Manor, Salisbury, is specially rich in Odontiodas, and he received awards for several finely coloured novelties, the best being Oda. Ganesa. Gerrish's variety (F.C.C.), Oda. Induna, Oda. Juanita, and Oda. Laura, Gerrish's variety. One of the largest red Odontiodas, that gained the highest award of the R.H.S., was Oda. Columbia, shown by Messrs. Charlesworth and Co. at the January meeting; while Messrs. Sanders' Oda. The Torch was one of the largest scarlets. Messrs. Armstrong and Brown's Oda. Coronation, Orchidurst variety and Oda. Purple Emperor, are both very distinct flowers.

In Miltonias the section which surpasses all others are the new M. William Pitt varieties of Messrs. Charlesworth and Co.; their wholly violet-purple variety atro-purpurea and the Rosslyn variety in Mr. Pitt's collection are both a revelation in colour expansion, for the deep colour which suffuses the whole flower is derived from the violet bases of the petals in M. Roezlii and the maroon mask on the lip of the M. vexillaria, the primary ancestors. Extending their development of Miltonia, Messrs. Charlesworth and Co. have produced many superb novelties; they staged at one of the recent shows four charming Odontonias in their early stages, Odontonia Alexandra obtaining an award.

Cypripediums have apeared at most of the shows of the year, Messrs. Cypher and Sons, Cheltenham, always showing them at their best, but the highest testimonials to their worth have been the two superb groups shown by G. F. Moore, Esq., who was awarded Gold Medals for his exhibits, and his gardener a Silver-gilt Lindley Medal. His best certificated plants were C. Memoria F. M. Ogilvie var. The King; C. Charlotte Dillon, Chardwar variety, and C. Mildred var. Mrs. Stephen Anderson. The best in Mr. Robert Paterson's group were C. Odin and C. Our Princess. One of the very best Cypripediums of the past year is C. Cappamagna var. Fred Sander, a variety that represents the highest type of this fine hybrid which Messrs. Sanders have yet flowered.

Brassavola crosses, in which Messrs. Cowan and Co. take special interest, include new forms of this firm's Brasso-Laelio-Cattleya Jupiter and the new type of B.-C. British Queen, which flowered also with H. T. Pitt, Esq., and Mrs. Gratrix; B.-C. The Globe, of Messrs. Armstrong and Brown; and B.-L.-C. J. M. Black, of Messrs. Flory and Black, a grand, yellow variety. The latter firm's Cattleya Prince Shimadzu var. Titanic and C. Tagus var. Excelsior were among the few Cattleyas certificated, which included the C. Joyce Hanmer of R. Gerrish, Esq.

Sir Jeremiah Colman's exhibits are always interesting in including some of the finest of the old species, and notably the grand forms of Lycaste Skinneri. Mrs. Bruce and Miss Wrigley in the Manchester district, and the veteran Orchidist, H. T. Pitt, Esq., were also exhibitors of these old favourites.

Manchester is now an important centre for Orchids, and both the Orchid Club and the older Manchester and North of England Orchid Society are doing useful work, and their meetings and shows attract some of the chief Orchidists in the country. The key of the arch at Manchester is Samuel Gratrix, Esq., West Point, Whalley Range, who has been an enthusiastic Orchidist from boyhood, and his wife is equally fond of Orchids, while his grower, Mr. J. Howes, is one of the best cultivators of our time. At practically every meeting of the Manchester Society Mr. Gratrix makes a fine display. A. Hanmer, Esq., Buxton, also stages fine groups, in which Odontoglossums and other favourites are marked features, and bring their reward in First-Class Certificates. Philip Smith, Esq., Haddon House, Heaton-on-Mersey, while seldom showing large groups, is noted for always staging novelties of sterling merit, especially in Cypripediums.

Mrs. Bruce and Miss Wrigley constantly keep up the Orchid fame of Bridge Hall, Bury, and, while showing many new Cypripediums raised in the collection, they never neglect the species, some of the original importations in the collection being still in fine condition, reflecting the highest credit on Mr. Burns, the gardener at Bridge Hall. The collection of Lycastes, some of which originated there, is probably the best in the country. Nurserymen from all parts of the country, including Messrs. Charlesworth and Co., Messrs. Sanders, Messrs. Cypher and Co., and Messrs. Armstrong and Brown from the south, are members of the Committee of the Manchester Society, and frequently show at the meetings. On the whole there is ample evidence that interest in Orchids is on the upward grade, and that those who are concerned do not intend to let it decline. *J. O'B.*

NEW HYBRID ORCHIDS.

(*Continued from November 29, 1924, p.* 370.)

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Goliath	B.-C. Thorntonii × C. labiata	Mon. Chassaing.
Brasso-Laelio-Cattleya Nerissa	B.-L. Helen × C. Mendelii	Stuart Low.
Cattleya Joan	Fabia × Lambeauii	C. J. Lucas, Esq.
Cattleya Queenie	Hesta × Dowiana aurea	McBean.
Cymbidium Emerald	Lowio-grandiflorum × Tracyanum	Stuart Low.
Cymbidium Fairy	erythrostylum × Gottianum	Sanders.
Cypripedium Armament	Armistice II × Maudiae	Mrs. Bruce and Miss Wrigley.
Cypripedium Dr. Clayton	Charlesworthii × Gurkha	H. J. Bromilow, Esq.
Cypripedium Eros II.	Queen Alexandra × Alcibiades	H. J. Bromilow, Esq.
Cypripedium J. T. Barker	Shogun × San-Actaeus	Sir H. Leon.
Cypripedium Llewellyn	Hanmer Christopher × Goliath	Keeling.
Cypripedium Mildred var. Mrs. Stephen Anderson	bourtonense × Christopher	G. F. Moore, Esq.
Cypripedium Madras	Fairrieanum × Gaston Bultel	H. J. Bromilow, Esq.
Cypripedium Olympia	Olympus × Leander	P. Smith Esq.
Cypripedium Paladin	Reginald Young × Fairrieanum	Mrs. Bruce and Miss Wrigley.
Cypripedium White Star	niveum × Alcibiades	C. Cookson, Esq.
Laelio-Cattleya ardentissima	C. Dowiana aurea × L.-C. Mantiniosa	Pauwels.
Laelio-Cattleya Heloise	L.-C. Labiosa × C. Enid	Stuart Low.
Laelio-Cattleya Helvetia	St. Gothard × Queen Marie	Sanders.
Laelio-Cattleya Navajo	L.-C. callistoglossa × C. Ballantiniasa	J. P. Mossman, Esq.
Odontoglossum Eve	crispum × Pallas	Mrs. Bruce and Miss Wrigley.
Odontoglossum Figaro	Vardar × Aglaon	Charlesworth.
Odontoglossum Minotaur	Cordoba × Clovis	Charlesworth.
Odontoglossum Thyades	Jaspar × St. James	Charlesworth.
Odontoglossum Zeta	Jasper × Mirum	McBean.
Odontonia Alexandra	Odontonia Merope × Odm. Crethus	Charlesworth.
Sophro-Laelio-Cattleya Pamela	L.-C. bletchleyensis × S.-C. warnhamensis	Stuart Low.

NOTE.—Laelio-Cattleya Eekeriana in list of November 29, 1924, should be L.-C. Bombardier variety.

THE TEMPERATURE OF ORCHID HOUSES IN WINTER.

THE various houses in which Orchids are grown may be grouped into four divisions, viz. :—(1) East Indian house; (2) Cattleya house; (3) Intermediate house; (4) Cool or Odontoglossum house.

The temperatures at night in the aforesaid divisions should be as nearly as possible as follow :—(1) 60° to 65°; (2) 55° to 60°; (3) about 55°; (4) 50° to 52°. The temperatures should be governed more or less by the weather conditions. When it is extremely cold a degree or two below the figures stated will cause less harm to the plants than an excessive amount of fire-heat.

The maximum degrees should be maintained whenever the external temperature ranges between 30° and 40°. The day temperatures should be raised at least 5°, and whenever the sun causes a rise of several degrees the plants will be benefited thereby, provided the atmospheric conditions of the house are suitable and the necessary amount of fresh air admitted. *J. Collier.*

ALPINE GARDEN.

PRIMULA CAPITATA.

A VERY old plant, introduced from the Himalayas so far back as 1850, P. capitata is very beautiful, the colouring of its exquisite blossoms being as pure as is found in any species of Primula, the depth of the blue or purplish-blue being worthy of all praise.

Rising from a rosette of deep green and beautifully undulated leaves, the stem, about nine inches in height, is encrusted with a thick farina or meal and supports a round and crowded head of somewhat drooping flowers which are of remarkable persistence, a notable attribute of so lovely a plant.

This Primula flowers very late, and last year it was at its best in early October from seedling plants.

Of easy culture, it has no objection to full sunlight, provided its roots are accommodated in a moist and peaty soil, although they grow excellently well in good loam.

P. capitata is very easily raised from seeds and may be propagated by division.

DIANTHUS MICROLEPIS RUMELIACUS.

THIS tiny Pink is best accommodated in the moraine or in scree, although it is sometimes quite happy in the alpine garden proper in full sunshine and planted in soil that is thoroughly drained. The small, rounded, congested cushion of minute foliage is very thickly studded with very small rose-pink flowers, which are produced in early spring—April and May.

A surfacing of chippings is advisable if the plant is accommodated in the rock garden and in a very damp winter, a sheet of glass will mitigate the evil wrought by damp, which is the greatest enemy of the high alpines.

Frequent disturbance at the roots is resented by this miniature Pink, an occasional light top-dressing meeting its requirements. It is a delightful little plant for the alpine house and makes a very pretty pan; propagation is best effected by means of cuttings. *Ralph E. Arnold.*

DIANTHUS SQUARROSUS.

WE have long been familiar with Dianthus squarrosus in rock gardens, and with the fact that it is said to come from South Russia, but, ubiquitous as we know some plants to be, it was with a feeling of surprise that I read in Reginald Farrar's *The Rainbow Bridge* how he came across it on the crest of the hills about Chebson Abbey in Tibet. What he states of it is worth quoting: "... there was also a big, fringy Pink, of ravishing fragrance, that was none other than our old and valued friend, Dianthus squarrosus." "Old friend," indeed, it is, and, like most old friends, not one to be neglected, but cherished.

It is a charming plant with masses of grassy leaves and hosts of large, deeply-fringed flowers which are of surpassing fragrance and give a distinct charm to the rock garden. The flowers, which vary from white to pink, are on stems from six inches to twelve inches long. A good plant, well-flowered, reminds one in its inflorescence of some lacy material spread above a green groundwork. The variety nanus, only six inches high, is a very desirable one.

There is no great difficulty in cultivating this attractive Pink. It likes a free, dry, sandy soil, and so far as I have experienced, does not call for the inclusion of lime in the compost. It does best in a sunny place and appears to advantage when in a mass trailing over rocks.

D. squarrosus is propagated by cuttings, pipings, or by seeds, the last method affording a ready means of securing a stock and giving the prospect of some variation in size of bloom and in its shade of pink or white. *S. Arnott.*

HARDY FLOWER BORDER.

TWO GOOD PHLOXES.

PHLOX canadensis, Perry's variety, is a border plant of outstanding merit, having most beautiful soft, Plumbago-blue flowers that are much larger and brighter in colour than those of the type. The plant is of strong, free growth, good habit, and flowers abundantly from the middle of April until the end of July. This Phlox is admirably suited to the front row of the herbaceous border, or it may be planted on the rockery. It is easily propagated by cuttings.

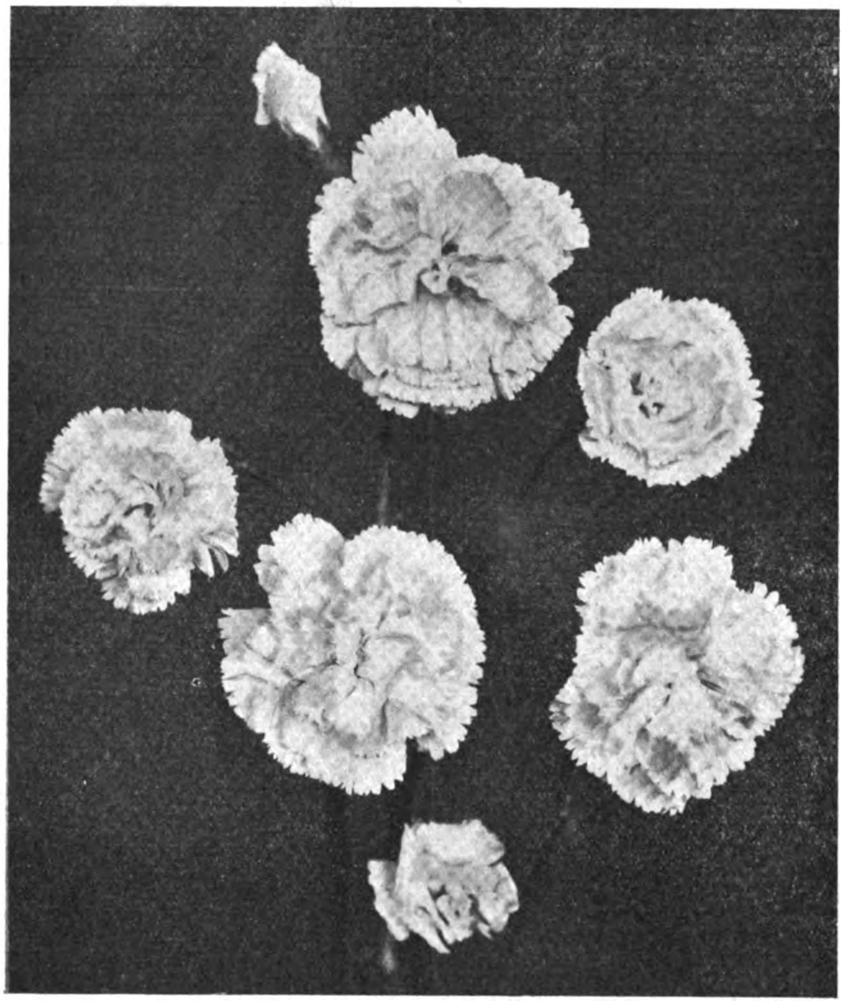


FIG. 3.—DIANTHUS ALLWOODII VAR. HAROLD.

Another Phlox of outstanding merit is P. maculata Alpha, which received the Royal Horticultural Society's Award of Merit in 1920. This Phlox attains a height of from two-and-a-half to three-and-a-half feet, and is of stout, vigorous growth, with effective, glossy-green foliage. The flowers are of a rosy-pink colour, and borne in exceptionally long trusses, closely packed, similar to the spikes of Hyacinths. This variety flowers continuously from the end of June to well into September.

SELECT ERIGERONS.

ERIGERON B. Ladhams and Erigeron Elsie are two beautiful border plants. The former grows from two feet to three feet tall, and bears pretty flowers, Orange-Apricot in the bud, changing to mauve-pink when fully open. The latter is well suited to the border or rockery, growing only twelve inches high, with large, Rose-pink flowers that are produced in abundance. This plant is effective from July until the autumn. *W. Logan.*

DIANTHUS ALLWOODII VAR. HAROLD.

THE beautiful varieties of Dianthus Allwoodii need no introduction to our readers, as they have been constantly kept before the public by their introducers, Messrs. Allwood Bros., who for many years have been engaged in improving the type, so that now there are diverse colours and forms to meet the needs of all. Messrs. Allwood Bros., both at Wembley and elsewhere, have shown how usefully this section may be employed for formal bedding or as edging - plants to the border, and amongst those varieties which have stood the test in the garden none, to our mind, surpasses the pure white Harold (Fig. 3), which has proved itself to be very free-flowering, so much so, indeed, that market flower growers cultivate the variety extensively in some parts of England.

This type of Dianthus is not only very floriferous, but the plants continue in bloom late in the year, and in mild winters will flower so late as Christmas.

Each year sees the introduction of new varieties of this class, and one of the most recent is Ann, which gained an Award of Merit after trial at Wisley. The flowers are large and beautifully formed, and the maroon "eye" is clearly defined against the setting of white petals.

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ROSA FARGESII.

THE increasingly frequent references in horticultural journals to a Rose with the above name justifies a protest against a breach of the practice long recognised in botanical nomenclature, of which it furnishes a cardinal example. By common consent, the names of men famous in the annals of botany are usually associated with species, and on the rare occasions when they are attached to important varietal forms systematically exhibiting some peculiar characteristic, it is always with the prefix *var.* or *forma*.

The investment of this Rose with the name of Farges, in any shape, is doubtless a matter of taste, but to associate the famous collector's name with it without varietal prefix, so that the Rose appears to be a good species, is unjustifiable.

Rosa Fargesii, as such, is unknown to science, and is hardly likely to be known, since it is nothing but one of the many colour forms of R. Moyesii found by Wilson, and to which, except in the case of the variety rosea—the leaves of which have a downy midrib—he did not think it necessary to give distinguishing names.

At one time it was suggested that the hirsute character of the fruits in some examples of this Rose was of sufficient morphological value to warrant the choice of a specific name for it, though no formal description was published; but seminal propagation has shown that the character is neither constant nor reliable. In some plants the hairs on the fruits are sparse, and in some they are absent. The fruits of this variety are supposed to be brighter in colour than those of the type, but, like the hairs, the colour varies; and in any case, colour is not a good botanical character.

If some botanist formally describes the Rose in question as R. Fargesii, and the determination is accepted, there is no more to be said; but unless and until that is done, the specific association of Farges's name with any of the pink-flowered forms of R. Moyesii can only lead to confusion.

Along with the type and other forms of R. Moyesii, the pink-flowered variety originated at Coombe Wood nursery, having been raised there from seeds sent home by Wilson in 1903. There are many forms of R. Moyesii, and the Rose to which Farges's name has been attached may come from a sowing of seeds of the type plant or the varieties.

The Floral Committee of the Royal Horticultural Society gave the plant an award on October 17, 1922, when it was brought to their notice as R. Fargesii, and although the official *imprimatur* of the Royal Horticultural Society carries no weight in scientific circles, it undoubtedly tends, in a horticultural sense, as in this instance, to the perpetuation of confusion.

The type plant is No. 3543 in Wilson's 1903 collection, with Tachien-lu as the locality. In his 1908 collection it occurs again twice, but with *deep rose* flowers and orange-scarlet fruits, under numbers 1056 and 3587, and localities north-east of Tachien-lu and west of Kuan Hsien. In the 1910 list the red-flowered Rose figures again under three numbers 1289, 4111, and 4098, all near Tachien-lu.

Rose growers may often have wondered why it should be so difficult to obtain this species on its own roots from nurserymen, but as it does not come true from seeds, nurserymen have either to graft their stock or raise it from cuttings. The species is easily raised from seeds, but seedlings do not flower for three years and sometimes four, by which time they are of some size. As no one can be sure of the colour of the flowers of seedlings till the plants have bloomed, nurserymen must either wait at least three years in the case of seed-raised plants or sell grafted plants, or rooted cuttings. If they sell unflowered seedlings the customer may find himself in possession of one of the forms with dull and dirty red flowers or those of brick colour. Under the circumstances, the nurserymen's choice of grafting is perhaps natural. The best way out of the difficulty is for amateurs to sow seeds themselves, take the pick of the plants and throw the rest away.

A particularly fine form of the type plant is to be seen now and again. In it the flowers are about two-and-a-half inches in diameter, the leaves correspondingly fine and the petal colour that of the type. There is a remarkably beautiful old bush of the pink-flowered form in the garden at Caerhays Castle, and three huge thickets of the 1903 type in wet ground in Mr. Burroughes's garden at Ketton, possibly one of the coldest gardens in the country. Birds find these old bushes convenient for nesting. *Amateur.*

THE ROSE GARDEN.

THE BEST BEDDING YELLOW PERNETIANAS.

With the introduction in 1910 of Rayon d'Or by Pernet-Ducher, a new break in colour for bedding Roses delighted rosarians. Hitherto the Tea and Hybrid-Tea groups had provided the yellow bedding varieties. These, *e.g.*, Lady Hillingdon and Mme. Ravary, to mention two well-known Roses, appear buff rather than true yellow when put alongside of Rayon d'Or, or the more recent yellow Pernetianas. The yellowish coloration in the T.'s and H.T.'s has been derived from the yellow, Tea-scented China Rose introduced a century ago. Rayon d'Or and its successors, on the other hand, owe their colour to quite a different source, viz., to the Austrian Briar (Rosa lutea), in which the yellow pigment is much deeper and purer than in the Tea-scented China. Though double, summer-flowering forms (*e.g.*, Persian Yellow and Harrisonii) of the yellow Austrian Briar have been known for a long time, I think I am correct in stating that before the advent of Rayon d'Or we had not a single yellow Rose of this origin, with the perpetual-blooming habit suitable for beds. Soleil d'Or (1900) made a near approach, but it is orange rather than true yellow in colour. This Rose, though it never achieved popularity, had within itself great potentialities. It resulted from a cross made by Pernet-Ducher between Persian Yellow and the H.P. Antoine Ducher. A decade later Rayon d'Or was produced by crossing Soleil d'Or with the H.T. Mélanie Soupert.

It has been the earnest desire of Rose growers to obtain a hardy bedding Rose with blooms after the style of the grand old Maréchal Niel. In the production of Rayon d'Or Pernet-Ducher pointed the way, and now the goal has almost, if not quite, been reached. It would have been more in keeping with the abbreviations H.P., H.T., etc., to have designated these new Austrian Briar Hybrids by the letters H.A.B.; but the Rose world, and especially the National Rose Society, was anxious to do honour to the great French Rose hybridist, and so christened this new race of Roses originated by him the Pernetianas—a euphonious name which met with approval and has persisted.

Rayon d'Or had not been long in cultivation before it began to reveal a grave defect, namely, that of a poor constitution. It dies back in a provoking manner, and a bed of it soon shows gaps through deaths, furthermore, there was not sufficient quality in its bloom to encourage the exhibitor to persevere with it. Its colour, of course, was its great asset. Now that several vigorous varieties of the same hue are in existence Rayon d'Or has already in many gardens become a memory only.

A trio of these at the present time tie for the premier place as the best bedding Yellow Pernetiana. These are Mrs. Wemyss Quin (A. Dickson and Sons, 1914), Golden Emblem (McGredy and Son, 1916), and Christine (McGredy and Son, 1918). There are still newer yellow Pernetianas on trial, one or more of which may supplant the above. My experience of them is as yet too limited to allow a definite opinion to be expressed.

Let me briefly analyse the merits and defects of the above three Roses, according as they acquit themselves in the N.W. of England. One gratifying feature is that the blooms withstand wet exceptionally well, and they have been abundantly tested in this way during the recent summer and autumn. Golden Emblem perhaps is a little more liable to damage by rain than the other two. The difference between a good and bad wet-resisting yellow Pernetiana was vividly brought before the writer when looking over some Roses in a local nursery last September. Pernet-Ducher brought out in 1920 a superb new yellow Pernetiana which he named Souvenir de Claudius Pernet, in memory of his son killed in the War. It is disappointing to think that this variety is hardly likely to become a universal favourite on account of its being only a fine weather Rose. In a batch of about fifty plants of Souv. de Claudius Pernet in the above nursery only one bloom out of a couple of hundred or so was at all presentable. The majority of them had balled in the full bud, and were in a state of rottenness; whereas a quantity of Mrs. Wemyss Quin and Golden Emblem adjacent had hardly a bloom spoilt. Christine, from my own experience, is equally as good as, if not better than, these two in wet weather.

One supposes that Souv. de C. Pernet rots so easily on account of its fullness, though I am inclined to think that there is something more than mere fullness to account for the bad behaviour of certain varieties under wet conditions. On the basis of petalage one would expect, for example, Mrs. Aaron Ward and Mrs. Alfred Tate to be as good rain-resisters as Mme. Ravary and Dorothy Page Roberts respectively; but they are not. Besides fullness of bloom, temperature may be involved. Perhaps some varieties are, as it were, set at a higher temperature for blooming than others. When it is dull and wet the temperature is usually lower than when the sun is shining. The "warm weather" Roses expand so slowly in the wet as to rot before they open out.

As regards habit Mrs. Wemyss Quin is the strongest grower, sending up tall, stiff, flowering shoots. A large bed of it is very effective as the central feature of a formal Rose garden. Golden Emblem, though rigid also in its growth, does not grow so tall, and for a given area rather more plants are required. At present no doubt it is the most popular of the three. There is a craze for it, and hence it is perhaps somewhat overrated. Christine has rather a straggling, pliable habit of growth, which some may regard as a drawback; but it is the most floriferous. The individual flower is on the small side, and sprays rather than single blooms should be cut for the house. A climbing sport of this variety, should it appear, might make a desirable perpetual-blooming, yellow, pillar Rose.

Respecting colour, Mrs. Wemyss Quin is on the whole the palest, and may at times border on that of straw or lemon; but here in the cool north-west it is usually bright yellow. Christine has the least fragrance of the three. The scent of these Roses, though quite pleasing, is neither that of the Damask nor the Tea Rose. A yellow Pernetiana with full Damask perfume would be an acquisition. The chief defect of these three Roses lies in their form. The central petals are too small and crumpled, so that the bloom when expanded lacks the pointed centre—in fact it is inclined to be quartered. As cut flowers they are also a little disappointing. When taken as full buds they do not continue their expansion in water, and when plucked as full blooms they soon drop their petals. In both these respects they compare unfavourably with such Roses as Mme. Abel Chatenay, Ophelia, and Richmond. The trade is evidently aware of this, as none of these Pernetianas appears in the Covent Garden cut-flower lists. They show to advantage more in the Rose bed than in the flower vase.

Another yellow Pernetiana sometimes grouped with the above three, Constance (Pernet-Ducher 1915), unfortunately belies its name, for it lacks constancy in it colouring. It is also inclined to be deficient in vigour.

Of the most recent yellow Roses reference must be made to Mabel Morse (McGredy and Son, 1922). It is spoken of as an improved Golden Emblem. It yet remains to be seen whether it will prove so good a bedder. Strange to say it is classed in the National Rose Society's List as a Hybrid Tea. Florence L. Izzard, a still more recent introduction from the same firm, may outshine Mabel Morse. It is likewise considered a H.T. by the N.R.S. There is also Sovereign (B. R. Cant and Sons, 1922), inclined to orange in coloration—rather short in growth, but may prove a good bedder. This is considered a Pernetiana. *J. P. Carlisle.*

PAEONY MANDARIN.

For beauty of form and grace in outline the single Paeony is surpassed by no other flower, and where a collection of Paeonies is under consideration some of the single varieties should be included. Their one defect—if it may be regarded as such, and common to all single flowers—is that they do not retain their beauty so long as the double varieties.

The Japanese have devoted much attention to the improvement of the single Paeony, so much so that there is a group popularly known as the Japanese section, the flowers of which are characterised by the quaint colourings of the closely-set petaloid stamens. Years ago, numbers of these varieties found their way into cultivation in British gardens, but there are few nurserymen who list many of them. One of the most extensive collections seen in recent years was that represented in the group shown in London on June 24, 1924, by Messrs. R. H. Bath, Ltd., and included among them was Mandarin (Fig. 4), a flower of refined proportions, possessing Rose-pink petals and a glorious central boss of amber-yellow stamens."

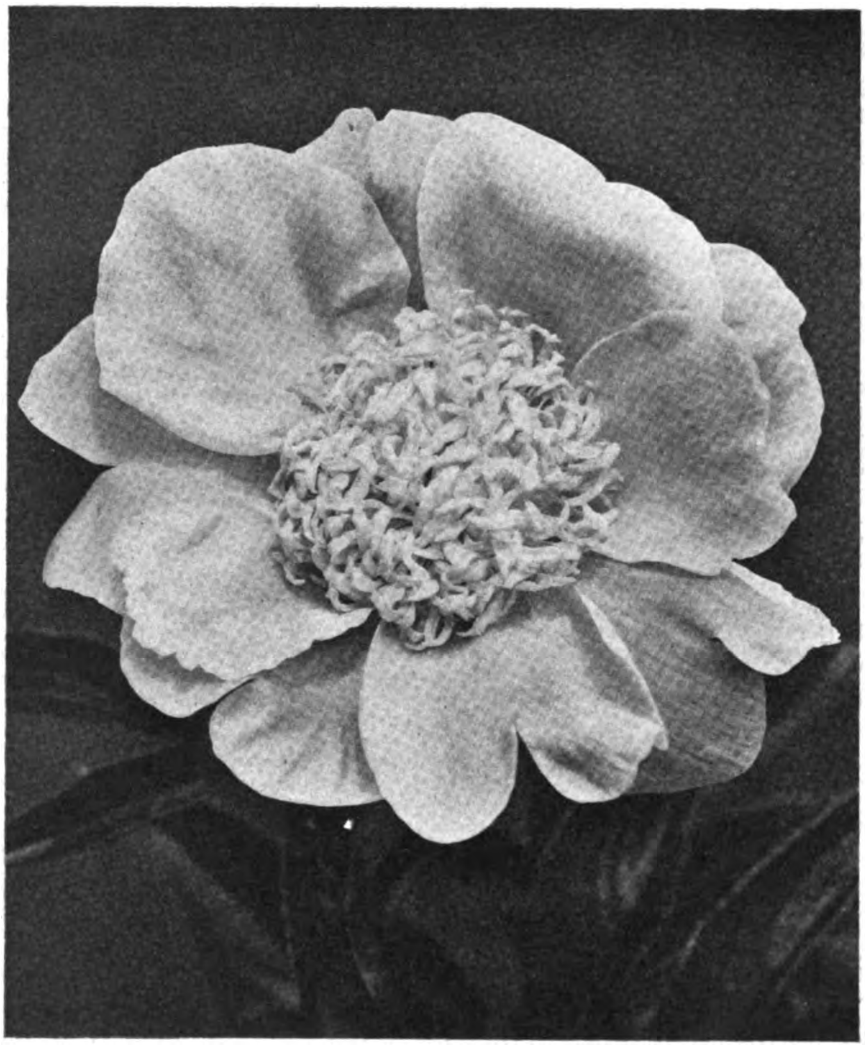

FIG. 4.—PAEONY MANDARIN.

TREES AND SHRUBS.

BERBERIS SOULIEANA.

ALTHOUGH this Berberis has been in cultivation for a number of years, I feel certain that it is not well known to cultivators, and I doubt if it is grown in many gardens. It belongs to the large group Wallichianae, the members of which are evergreen and have black fruits, B. insignis having the largest leaves and B. sanguinea the smallest; those of B. Soulieana are intermediate in size. It is a Chinese species and has a shrubby habit; young plants left undisturbed attain a height of four feet or so in five years, with pretensions to reach six feet or more eventually. Old plants appear to resent removal.

The shoots are greyish-brown and angular: the foliage is dark green, thick and smooth, sublanceolate, up to three inches long, and three-quarters-of-an-inch wide; the undersurface is a paler green than the upper surface. The leaves are margined with small spines pointing to the apex; the main rib is sunken, the other veins more or less obscure. The inflorescence is fasciculate or clustered at the axils of the leaves, also on the older wood; even now the flower buds are plump on the last season's shoots, but the flowers will not open fully until the end of April. The berries are about the size of Sweet Pea seeds, each containing one to three seeds; they are almost round, black, and densely covered with a bluish bloom. This species is a distinct and desirable Berberis but should not be confounded with B. atrocarpa, which has spindle-shaped berries, less bloom, and not so many in a cluster, and they contain one to two seeds, and have a slightly thinner and longer pedicel. *C. F. C.*

ILEX CRENATA.

THIS is a useful evergreen shrub for the rock garden, for it is compact and dense in habit, quite hardy and very slow growing. The leaves are no more than half-an-inch long and half as wide, unarmed and oblong-lanceolate.

The flowers are said to be white and the berries black, but a specimen here, now over twelve years old and not more than eighteen inches in height, has not yet bloomed.

I. crenata is popular in Japan, its native country, as a clipped shrub, being adaptable not only for the creation of grotesque designs, but for the making of dwarf hedges of great density. Though introduced to our gardens in 1864, the species is still uncommon in cultivation. There are several varieties, including one with variegated foliage. *A. T. Johnson, Taly Cafn, North Wales.*

[This small species of Ilex was shown in the collection of Hollies exhibited by the Hon. Vicary Gibbs at the meeting of the Royal Horticultural Society on December 16 last and attracted considerable notice. EDS.]

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

NYCTERINIA CAPENSIS AND N. SELAGINOIDES.

These two small-growing, half-hardy annuals are worth cultivating in a small greenhouse. The former has Vanilla-scented, white flowers, while the latter has pink flowers with a yellow eye.

Seeds may be sown during January or February in a cool greenhouse, and when fit to handle the young seedlings should be pricked off into a shallow box or pan; later, when large enough, transfer them to thumb pots, and in due course place them in their flowering pots. As they are small-growing plants 48-sized pots are quite large enough, or several plants may be placed together in a shallow pan. Beyond careful watering and the usual cool treatment the successful cultivation of these plants presents no difficulty.

PAROCHETUS COMMUNIS.

Although this beautiful, blue-flowered, Clover-like plant is a perennial, and more or less hardy, it may be treated as an annual as it flowers within a year from seed sowing. Seeds may be sown in a cool house during September, or during January or February, and the seedlings pricked off into shallow seed boxes when quite small. As this plant is of a prostrate, creeping habit, it is only suitable for fillling hanging baskets or shallow pans; when large enough the plants should be placed in suitable-sized baskets or pans, six to eight inches in diameter. The cultivation of this plant is not at all difficult as it thrives under perfectly cool conditions, and in any good potting compost.

PETUNIA.

In their many varieties, both single and double, the Petunias are ideal subjects for pot culture, and it is surprising they are not more generally used for conservatory and greenhouse decoration. The present-day garden race is supposed to be descended from two species, both natives of the Argentine, viz., Petunia nyctaginiflora and P. integrifolia (syn. P. violacea). The former has long, tubular, white flowers, and the latter purplish-violet coloured flowers; both make elegant pot plants, but at present their cultivation seems to be restricted to Botanic Gardens. As with the garden strains so with the species; propagation is effected either by means of seeds or cuttings.

Dealing with the garden varieties, seeds may be sown during February or March, in a house with a temperature of about 50°, using a light, sandy compost, and sowing the tiny seeds very thinly and just covering them with a dusting of fine, sandy soil. Cover the seed receptacles with a piece of glass and keep the pans shaded until germination takes place. When fit to handle the young seedlings should be pricked off into shallow boxes or pans, using a light, irch compost at this stage. The seedlings should be watered carefully, and being tender, should be kept shaded from bright sunshine. When they have made several leaves the young plants may be transferred singly to small sixty-sized pots, using a slightly heavier compost than before, but in their subsequent stages of growth any good potting compost will prove satisfactory.

As they increase in size, and the season advances, the plants should be accustomed to ordinary greenhouse conditions, giving them plenty of air and shade during the hottest part of the day.

Excellent examples of the smaller-growing varieties may be cultivated in five-inch pots, the stronger-growing varieties requiring six-inch and seven-inch pots, or if large specimens are desired they may be grown on in eight-inch or nine-inch pots.

Young plants should be pinched frequently to promote a bushy, well-furnished habit; stopping should be regulated by the time the plants are required to flower, allowing about a month from the last pinching to the time of flowering; neat staking and tying are necessary. Petunias enjoy liberal feeding with diluted liquid farmyard manure, or some approved artificial fertilizer when they have well filled their flowering pots with roots.

When dealing with the double varieties care should be taken to retain the smaller seedlings, as they are most likely to prove the best. If it is desired to keep any particular variety this may be done by means of cuttings, which root readily in a close case. *J. Coutts.*

INDOOR PLANTS.

NEPENTHES.

Very few subjects grown under glass are more attractive or interesting than the Pitcher Plants. They are amongst the most ornamental of plants for growing in baskets suspended from the roof-rafters amidst a collection of other foliage and flowering plants in a moist, warm conservatory. They are also valuable for exhibitions or other decorative purposes, and with care will last fresh and green for a considerable time. The pitcher is a most striking appendage of the leaf developed at its apex, and furnished with a stalk often a very long one. At the mouth of the pitcher is a thickened corrugated rim, and in the pitcher itself is a fluid. The inside of the lid is studded with honey-secreting glands, which are also present around the corrugated rim. This is the bait that allures the insect to the trap, and it is drowned in the fluid at the bottom, providing nourishment to the plant by this novel means. It is not desirable that the pitchers of cultivated Nepenthes should contain a mass of decomposing insects, and flies or other insects may be prevented from entering by placing a piece of cotton-wool just inside the mouth of the pitcher, also by keeping the pitcher partly filled with water. The water will serve to stimulate the plant for it will be absorbed through the midrib of the leaf. The pitchers are often beautifully coloured. The flowers are very interesting, and are produced when the stem has attained a considerable length. The flower stalk is usually produced from the end of the stem, but not always: it sometimes attains a length of two feet and bears upwards of a hundred small flowers. The stems of vigorous-growing Nepenthes will lengthen to two feet to three feet in a single season, and will have ten to twelve pitchers depending from them. Growers do not usually allow the stem to grow to such a length, and after the plant has made a reasonable amount of growth the stem is stopped by pinching or cutting, resulting in the plant making a bushy specimen.

The pitchers of the various species differ greatly in form and size; they vary from a few inches to a foot to eighteen inches in length. The plant is an epiphyte, therefore it does not require much soil, and it is poorly provided with roots. The soil should consist of two-thirds fibrous loam, from which all the finer earthy matter has been shaken out, and one-third Sphagnum-moss mixed with charcoal, clean potsherds, and silver sand. Provide plenty of drainage, as the plants will require a large amount of water. In re-potting, be careful not to injure the roots; shake off all loose, old, or sour soil, and place the plants in pots or baskets of a small size. The baskets should be made of Teak wood, which is more lasting than any other kind, and not liable to be attacked by fungi. The best time for potting and overhauling the plants is abouts the middle of February, when cuttings may be taken off and inserted. The strong tops make fine specimens with strong leaves and pitchers suitable for growing on as specimen plants for exhibition. The young offshoots which arise from the base of the plant make good cuttings. They should be taken off and placed in a moist, warm house or pit; they should not be allowed to flag, but kept well watered.

Nepenthes require a temperature of 60° to 70° with an abundance of water; they may be grown in baskets in a warm stove, hanging over foliage or other plants, or over a heated water-tank, with plants suitable for growing in water underneath. The pitchers should be kept partially filled with water, and the plants need to be syringed two or three times a day. Shade the plants from strong sunshine.

It is very interesting to watch the growth of seedling Nepenthes and the developing of the young pitchers. At the Royal Exotic Nursery, Chelsea, visitors were always attracted to the Nepenthes house, where the plants grew most luxuriously over a heated water-tank with side stages. Many of the fine species and hybrids that were grown during the later part of the last century appear to be lost to cultivation. The following hybrids may be highly recommended to the cultivator of warm-stove plants; many of them were raised by Mr. Tivey, who had charge of the Nepenthes at Chelsea, and cultivated them so well:—N. Sir Fred. W. Moore, a very distinct variety, the pitchers, globular in form, having a moderately broad rim of deepish, reddish-brown: N. Tiveyi, a handsome variety with large pitchers of a rich mahogany-red colour: N. Sir W. T. Thiselton-Dyer, with extra large pitchers that are richly blotched with brownish-crimson; N. Chelsonii excellens, the pitchers profusely spotted and blotched with crimson-purple; N. Dickinsoniana, one of the finest of hybrids, with pitchers fourteen inches long; N. Mastersiana, a very free-growing variety, with richly-coloured pitchers; and N. Morganiae, colour blood-red in the adult stage.

The most distinct amongst the species are those following:—N. Northiana, the adult pitchers of which are twelve to sixteen inches long and crimson spotted; N. Hookeriana, pitchers spotted with red, and furnished with laciniated wings; N. Curtisii superba, a striking Nepenthes, the ground colour of the pitcher being a rich blood-red; N. Burkei excellens, richly-coloured, cylindrical pitchers, with a chestnut-red rim; N. Rafflesiana, greenish-yellow, richly marked with brown; N. Veitchii, very distinct, rich green pitchers with a brownish tinge; and N. ventricosa, with pitchers about five inches long, curiously contracted in the middle. All those I have enumerated are distinct and easy to cultivate. *John Heal, V.M.H.*

THE ANTIRRHINUM.

In bygone days Antirrhinums were seldom seen beyond the limits of old-fashioned cottage gardens and the plants were usually increased by division of the roots. They may, however, be propagated from cuttings inserted in the autumn, pricked out in a cold frame and planted out in their permanent quarters early in May; but this method is very little practised. The best results are obtained from plants raised from seeds.

In the process of raising, selecting and re-selecting the plants, three distinct types of Antirrhinum have been evolved, viz., tall, intermediate, and dwarf, thus increasing the value of the flowers for garden purposes. The tall varieties attain a height of three feet; the intermediate type generally ranges between twelve inches to eighteen inches and the dwarf or Tom Thumb section seldom exceeds six inches; all three classes have a distinct value for different positions in the garden.

Antirrhinums are fairly hardy plants and will withstand severe winters, especially when they are growing in dry positions, for a cold, damp atmosphere is most harmful to them. A severe night's frost following a day or two of dense fog usually proves fatal to plants that would otherwise have withstood our ever-changing climate. I have sometimes seen Antirrhinums growing in cottage gardens close to a wall and surviving the severest weather, especially those planted in a border by the dwelling house; they just receive that little extra warmth which is necessary to carry them through the winter.

If plants raised from cuttings can be successfully nursed throughout the winter they will give an abundance of bloom quite a fortnight earlier than those raised from seeds. However, I am of the opinion that the old-fashioned Antirrhinums we were acquainted with many years ago were of a hardier type than the present-day varieties.

Although the Antirrhinum is a perennial it is usually treated as an annual or biennial. I usually make two sowings of Antirrhinum seeds, the first about the middle of December and the second about the end of January, but those of the December sowing usually make the best plants. The first sowing is raised in a temperature of 65°, but for the January sowing ten or fifteen degrees less warmth will suffice. The days begin to lengthen then, the sun is gradually gaining in power and vegetation is on the move.

Sow the seeds thinly in shallow boxes about three or four inches deep and place in the bottom of each box some rough soil to act as drainage, filling the box with light, sandy soil mixed with finely-sifted leaf-mould. Fill the boxes to about half-an-inch from the top and press the soil gently to form an even surface. Before sowing the seeds, sprinkle some finely-sifted, sharp brown sand over the soil for the seeds to rest on; this favours a quick germination and is a remedy against damping. Lightly cover the seeds with the compost; place the boxes on a stage or shelf and gently water the soil by using a fine rose-watering can. Place a square of glass over each box, as this retains the moisture, increases the heat, and favours rapid germination, but immediately the seedlings show above the soil the glass should be removed or the plants will become spindly. In a temperature of 65° the seeds will germinate in about a fortnight's time. Grow the plants as near to the roof-glass as possible to ensure sturdy growth. Do not water the seedlings until they are thoroughly dry and then give them a good soaking; small quantities of water only favour damping of the seedlings just above the soil.

By the middle of February or early in March the plants should be ready for pricking out into frames at a distance of about three inches either way, according to the frame room at disposal. I have already stated that Antirrhinums will grow in any good garden soil, but nevertheless, if the soil in the frame is enriched with good, well-rotted manure the plants will be greatly benefited, and give large, handsome flowers. I occasionally grow the dwarf varieties in dry places in the rock garden and they hold their own with the other subjects usually planted in that particular garden.

The soil I use for the planting in frames is old compost in which Melons and Cucumbers have been grown, or old Chrysanthemum soil which has been turned out of the pots after the plants have finished blooming, mixed with manure from a spent Mushroom bed. I do not add any light material such as sand, leaf-mould or wood-ash.

The Antirrhinum is a strong-rooting plant and will soon become established in heavy soils. Give the plants plenty of air, but guard against cold, cutting winds which we frequently experience in March. In the event of a severe frost, provide covering material, but do not coddle the plants at any time. By the beginning of April the lights may be dispensed with, for a few degrees of frost does no harm, provided the foliage is dry. Some growers pinch the tops out of the leading shoots whilst the plants are in the frame. I recommend this practise for pot culture, as it tends to make the plants bushy, but for plants growing in the open border I hesitate to recommend this treatment and I have never practised it, as it delays the time of blooming by a week or ten days. I certainly advocate the removal of the main shoot before any seed pods have formed, and that usually happens before all the flowers at the top of the shoot have fully expanded.

By the first or second week in May the weather should be suitable for planting Antirrhinums in their permanent quarters. Allow a distance of twelve inches to fifteen inches between the plants; if they have been well grown and received no check, they will soon fill this space.

Give the plants a good soaking with water the night before planting them to allow the foliage time to dry. The plants should lift readily with large balls of soil, especially if heavy soil has been used; plant firmly and not too deeply, just covering the roots with an inch or so of soil.

If space will allow, plant in masses of one colour, as in this way Antirrhinums are much more effective than if dotted here and there throughout the garden.

Antirrhinums fortunately are not subject to green fly, red spider, or the usual insect pests of gardens.

I specially recommend the following varieties: tall section: Coral Red, Orange King, Cloth of Gold, Fire King, and Deep Crimson; intermediate section: Rich Apricot, Buff Beauty, Canary Yellow, Bright Pink, Orange King and Fire King; dwarf varieties: Delicate Pink, Pale Apricot, Yellow Prince, and Crimson King. *J. A. Kirkwood, Sutton Place Gardens, Guildford.*

TRANBY CROFT.

THE fine mansion at Tranby Croft, erected about fifty years since by the late Mr. Arthur Wilson, is situated five miles west of the town of Hull. It is seventy feet above sea level and the surrounding country is flat, but the ground rises gradually on the north-east side and the river Humber is only a short distance away.

A good selection of evergreen and deciduous trees and shrubs was planted when the house was built, and the carriage drive, which is about a mile in length, is laid out in a series of graceful curves, bounded on both sides by plantations of Cupressus, Thuja, Libocedrus, Pinus and Abies in variety, with a few deciduous trees intermixed, and some Retinosporas, Portugal Laurels, and other dwarf-growing evergreens in front. Together, these form a remarkably fine collection which has suffered a little from overcrowding in certain places, owing to the lack of thinning about thirty years since.

These plantations and others on various parts of the estate screen other subjects from the wintry winds and enable a fine selection of tender shrubs to be grown which would otherwise fail to survive; the collection includes Stuartia Pseudo-camellia, Ginkgo biloba, Sciadopitys verticillata, Azara microphylla, Oxydendrum arboreum, Stranvaesia glaucescens, Plagianthus betulinus, Desfontainea spinosa; Andromeda japonica, A. floribunda, Dimorphanthus mandschuricus, Rhus Cotinus, R. typhina, Euonymus alatus, Cercidiphyllum japonicum, Enkianthus and a goodly collection of the newer forms of Berberis including B. dictophylla, B. Stapfiana, B. subcaulialata, B. Gagnepainii, and others. Particularly worthy of mention are two plants of Garrya eliptica which are upwards of twelve feet in height.

The mansion is partly covered by Ampelopsis Veitchii and other creepers; a broad terrace runs along the south side, on which some very fine specimens of Hydrangeas are grown in tubs; these have flowers of a blue colour which contrast well in the autumn with the crimson creeper on the surrounding walls.

Near the house are some oblong beds devoted to summer flowers. When I saw them, early in September, Calceolaria amplexicaulis was especially fine. Other beds contained Heliotropes, tuberous Begonias, and variegated Phlox decussata which is grown for its foliage alone, to give more effect to the Begonias.

Lawns extend on all sides of the house and on these there are some fine specimen Conifers and various deciduous trees. Paths lead in various directions to secluded gardens, one of which is devoted to Roses, another to mauve and blue flowers; one contained about twelve varieties of Phloxes, which were in full flower and scented the air for a great distance. Trellis work screens around this garden are covered with Rambler Roses, which give a display earlier in the season.

A paved walk, twelve feet wide, leads from the Phlox garden towards the house. This has a narrow verge of grass on either side and borders of flowers also; these are 186 feet long and 13 feet wide, thus giving plenty of space for plants of varying heights to develop and display themselves to advantage. On the north side, the wall of the kitchen garden gives protection from cold, cutting winds. The plants used for these borders consists chiefly of annuals which are raised from seeds sown where they are to flower. Three periods are chosen for sowing, commencing early in May, in order to get all the plants to flower at the end of August and during September, this being the period when Mrs. Wilson and family are at Tranby. Notwithstanding the dull, rainy summer of 1924, it was surprising to see such a wealth of colour which continued day after day in rain or sunshine.

The colours are arranged in irregular masses which shade off into each other. Some of the principal plants used were as follow:- Blue and mauve shades; Aster sinensis, single; Salvia patens, Salvia Horminum, Ageratum mexicanum, Lupins, annual varieties; Stocks, Scabious, Nemesia Blue Gem, Pentstemons Mauve Queen and Royal Scot, Gladiolus Baron Hulot and Lobelia cardinalis Purple King. White: Pentstemons, Nicotiana, Aster sinensis, single, and Clarkia and Candytuft. Red: Alonsoa, Pentstemons George Home and Crimson Giant, Zinnias, Antirrhinums and Lobelia cardinalis Queen Victoria. Pink: Antirrhinums Carmine Pink and Fascination, Gladiolus America, Aster sinensis, single; Acroclinium roseum, Pentstemon Lincoln Pink, Gladiolus Halley, Godetia, single: Dahlia Crawley Star, Phlox Drummondii, Clarkia, Lobelia cardinalis Carmine Queen, Zinnias, and Petunia Rosy Morn. Yellow: Calceolaria amplexicaulis, Antirrhinums, Chrysanthemum, annual yellow; African Marigolds, Coreopsis Drummondii, Eschscholzia californica and Helianthus decapetalus.

The flowering period of these border plants is lengthened considerably by the removal of seed vessels in a young state, and in connection with this display it is interesting to note that Mr. Tom Neale who attends to it so well has worked in the gardens upwards of fifty years.

Ornamental gates lead to the kitchen garden and plant houses and the flower borders are continued here on a similar plan to that already described.

Tranby Gardens are noted for the excellent fruit produced there, both outside and under glass, and many prizes have been won by them during recent years, both at local shows and at the Royal Horticultural Society's Exhibitions. I saw many very fine bunches of Grapes in the vineries, especially of Muscat of Alexandria, Madresfield Court, and Black Hamburgh. Peaches and Nectarines were almost over, but the trees were well furnished with healthy foliage and wood for next year's crop. Figs were ripening their second crop of fruits, Brown Turkey being the favourite variety. Pears outside were heavily cropped, some of the best varieties being Doyenné du Comice, Marie Louise, Fondante d'Automne, Seckle, Thompson's, Buerré Hardy, Williams' bon Chrêtien and Louise Bonne of Jersey. Apples were carrying heavy crops, especially the bush trees in the kitchen garden, and some of the best were Warner's King, Bismarck, Gascoyne's Scarlet, Potts's Seedling, Bramley's Seedling, Ecklinville Seedling, Monarch, Peasgood's Nonesuch, Dewdney's Seedling, Worcester Pearmain, Cox's Orange Pippin, Ribston Pippin, Loddington, and Newton Wonder.

A warm corner in the garden contained a good batch of the Japanese Wineberry (Rubus phoenicolasius), the fruits of which make an attractive dish for the dessert table. The Loganberry and Rubus laciniatus are trained on stakes and wires and both carried heavy crops of fruits. Before leaving the kitchen garden, which contained an excellent supply of the usual kinds of vegetables, I noticed a splendid bed of Dixon's Champion Globe Onions which were ripening off well, and many of the bulbs would be nearly three pounds in weight each.

In the plant houses was a choice collection of the new varieties of winter-flowering Begonias, the plants being about to flower. The varieties included Optima, Beacon, Exquisite, Emita, Eclipse, Emily Clibran, Clibran's Crimson, and Pink Perfection: they were all in robust health and a striking tribute to the skill of Mr. W. Earl, the head gardener, who has managed the whole of the gardens most successfully, and is now taking charge at Knowsley.

Belladonna Lilies were commencing to flower in a border on the south side of one of the forcing houses. Winter-flowering Carnations occupied several houses and were flowering well, and some good plants of Poinsettia were in another division, but one of the most useful flowering plants for winter in these times is undoubtedly the Chrysanthemum, as it may be grown at such a small expense in regard to fuel, gives a great variety both of form and colour, and flowers over a long season. The collection at Tranby Croft is a representative one, and the plants showed ample evidence of high cultivation. *W. H. D.*

AMERICAN NOTES.

STANDARDIZED PLANT NAMES.

I have read over again the amusing comments on *Standardized Plant Names* by one of your correspondents, on page 138 of your issue for March 8, 1924. We Americans are an ignorant and humourless people. We know this because we have been told so from the British Isles for three hundred years. We believe it, we admit it, we regret it: yet there are some things to which we are inclined to hold fast. For example, when the American pioneers a century ago penetrated the wilderness to the Oregon region they found a native fruit that grew in bunches and had the blue colour, taste, and edible qualities of a wild Grape. Being hungry they ate it and they called it the Oregon Grape. When Oregon became sufficiently civilized to require a State flower, she adopted this wild plant in appreciation of the beauty of its Holly-like foliage, and in commemoration of the days of tribulation in the wilderness. There is a group of these species, West American and East Asiatic, which have acquired a place of honour in British and American gardens. They are not Grapes: they are not Barberries in the ordinary sense of that word. Botanists disagree whether their Latin name shall be Berberis, Odostemon, or Mahonia. The compilers of *Standardized Plant Names* adopted for this beautiful group of shrubs the common name Hollygrape because it combined with usage a little history and a little sentiment. Will not our British cousins accept from us this American common name of a group of plants somewhat intertwined in American history?

Your unnamed correspondent is in error regarding the name Wisteria. Many American botanists use the Latin name Kraunhia in place of Wisteria because Kraunhia was published ten years earlier, but *Standarized Plant Names* adopted Wisteria as both the Latin name and the common name of this genus, because the name Wisteria is thoroughly established in horticultural usage.

Standardized Plant Names contains about 40,000 entries. In choosing the names of horticultural varieties, the compilers were guided by considerations of usage, priority, suitability, brevity, and accuracy. In some cases they gave new English names to horticultural varieties bearing complicated Latin names. For example, one of the many varieties of Boston Fern previously called Nephrolepis exaltata bostoniensis elegantissima compacta cristata was re-christened "Cockatoo," to the great relief and joy of admirers of the Boston Ferns. In *The Gardeners' Chronicle* for July 30, 1921, page 64, is an illustration of a beautiful new hardy Fern which had received the Royal Horticultural Society's Award of Merit. The name given under the figure of the new Fern was Polystichum angulare divisilobum plumosum densum erectum! As a member of the nation that is sometimes accused of attempting to make culture hum, I submit that British ingenuity ought to be able to devise a better name than this, something standardized. If there is not leisure for the invention of an English name that is dignified and elegant, may we not hope for something that at least is short and snappy?

[We have retained our contributor's spelling of Wisteria. According to Bailey, in his *Standard Cyclopedia of Horticulture*, this popular climber is "named for Casper Wistar, 1761-1818, Professor of Anatomy in the University of Pennsylvania, but spelled Wisteria by Nuttall, author of the genus, the spelling Wistaria being a later adaptation." Wistaria is the name usually adopted in this country and is the form maintained in the *Index Kewensis*.—Eds.]

CLETHRA ALNIFOLIA.

In *The Gardeners' Chronicle* of September 27, 1924, page 211, is a note by *J. F.* calling attention to the attractiveness of Clethra alnifolia as a cultivated shrub because of its white flowers, with a fragrance resembling that of wild honey, which come in summer when the majority of shrubs have given up flowering. This plant is abundant in moist, sandy, peaty, acid soils along the Atlantic coastal plain from New England to Florida. In the savannahs of the pine barrens of New Jersey it fills the air with fragrance during the month of August. In cultivation it prefers a strong acid mixture of peat and sand such as is best for Rhododendrons, Azaleas, Blueberries, and other acid-soil plants. Occasionally a pink-flowered individual occurs in the wild. Such plants are very attractive in cultivation. The common name Sweet Pepperbush, to which *J. F.* refers as presumably American, is sometimes found in books, but when the compilers of *Standardized Plant Names* endeavoured to find the origin of the name and what rational application it could have to this shrub they were unable to get a satisfactory answer to either question. They therefore adopted the name Summersweet, which is very happily expressive of the principal characteristics of this beautiful shrub. *Frederick Coville, Botanist, Washington, D.C.*

VEGETABLE GARDEN.

BRUSSELS SPROUTS AS A MARKET CROP.

The staple winter crop among market growers around Manchester, especially on the Cheshire side, is Brussels Sprouts; so much as half and very rarely less than one-third of their holding is devoted to this important crop, which is often the only source of income during what is as a rule the slackest period of the year.

The strain is purely local, and every grower firmly believes that he is in possession of the best available variety. The purity of the strain may be attributed to the great care taken by the growers in the selection of the perfect seed-bearers from among thousands of plants.

The average type is of medium height: the stem is very thick; the leaves, nearly cordate, on long petioles, are of a light shade of green, with very pronounced nervures of a creamy white hue. The growth is compact, and the sprouts of medium size, closely packed together, and the head is very firm and resembles a small St. John Savoy.

Up to the last few years seeds were sown early in March in the final quarters allotted to this crop, but the late frosts proved to be so prejudicial to the seedlings that this method had to be abandoned.

The seeds are now sown thinly in cold frames, the first lot in the middle of February and the second batch early in March. Some growers, whose holding is on heavy soil, sow the seeds on hot beds, as they require strong plants at setting time, but the majority prefer plants reared in cold frames.

The seedlings are grown sturdily: ventilation is afforded whenever possible, and on bright days the lights are removed altogether; they are never transplanted in nursery quarters, as the Brussels Sprout is considered and grown as a main crop and is planted out at the earliest possible date. The final quarters allotted to the crop are heavily manured, and so much as forty tons of manure to the acre is not considered excessive, though half that quantity is ample.

Sewage manure is frequently used as it can be obtained cheaply from the Manchester and Stockport Corporations. This is applied directly to the land, or mixed with the ordinary manure on the middens. A dressing of ground lime at the rate of five cwts. to the acre is also given before the land is ploughed or dug.

The plants are placed two feet apart each way, and planted from the middle of April to the middle of May, but never later. The planting is done at fortnightly intervals by taking always the strongest plants from the nursery bed. The crop seems to make very little headway until the end of June, but after that period the growth is vigorous, and towards mid-July the ground is hoed carefully, the weeds are removed with the fork, and a dressing of chemical manure with a good percentage of nitrate of soda is applied around each plant, after which the Sprouts are ridged up by means of the Planet Junior hoe, which is an excellent implement for this purpose.

After this operation the crop soon covers the whole of the ground and the sprouts begin to show in the axil of each leaf from top to bottom of the stem.

Although Brussels Sprouts are marketed so early as August, it is only in September that picking is begun in earnest and it is carried out methodically. The batch is divided into four beds, each lot representing the supply for one week, and it is remarkable to notice how the sprouts have developed when a section is picked over again when its turn comes.

Should the growth appear to be lagging, a dressing of chemical manure may be applied with advantage so late as October. From the first week in January the heads, which have by this time formed into a nice heart, are cut and marketed, one lot each week, as in the case of the Sprouts. The small sprouts left on the stalk continue to develop and give an appreciable picking during February and early in March, when "greens" are both scarce and dear, and the picking does not cease until the stalks are bereft of leaves and sprouts, so it will be understood that considerable importance attaches to a crop which yields a regular supply for such a long period.

When picked, the sprouts are carried into a shed, trimmed of all the dead and loose leaves, the stalk is cut clean, and they are then washed and placed in hampers holding twenty-four pounds each. Before the war, the sprouts of the size of a Walnut were sorted out and packed in special hampers of eight pounds each and the top layer was neatly made up of straight rows of sprouts so as to enhance the appearance of the produce, but this practice has now been abandoned by the growers.

During the picking period, the perfect specimens suitable for seed bearers are marked out. They are lifted carefully early in January and set closely together in a secluded corner. Just before the flowers are ready to burst open a thin netting is fixed over the plants to prevent intercrossing from an outside source, and also to stop, later, the depredations of birds, which are particularly fond of the seeds.

When the seed pods begin to burst the heads are cut off, wrapped altogether in a sheet, and hung in an open shed so that the seeds may fully ripen. The seeds are cleaned when a suitable occasion offers a few weeks later. *P. Aquatias, Timperley, Cheshire.*

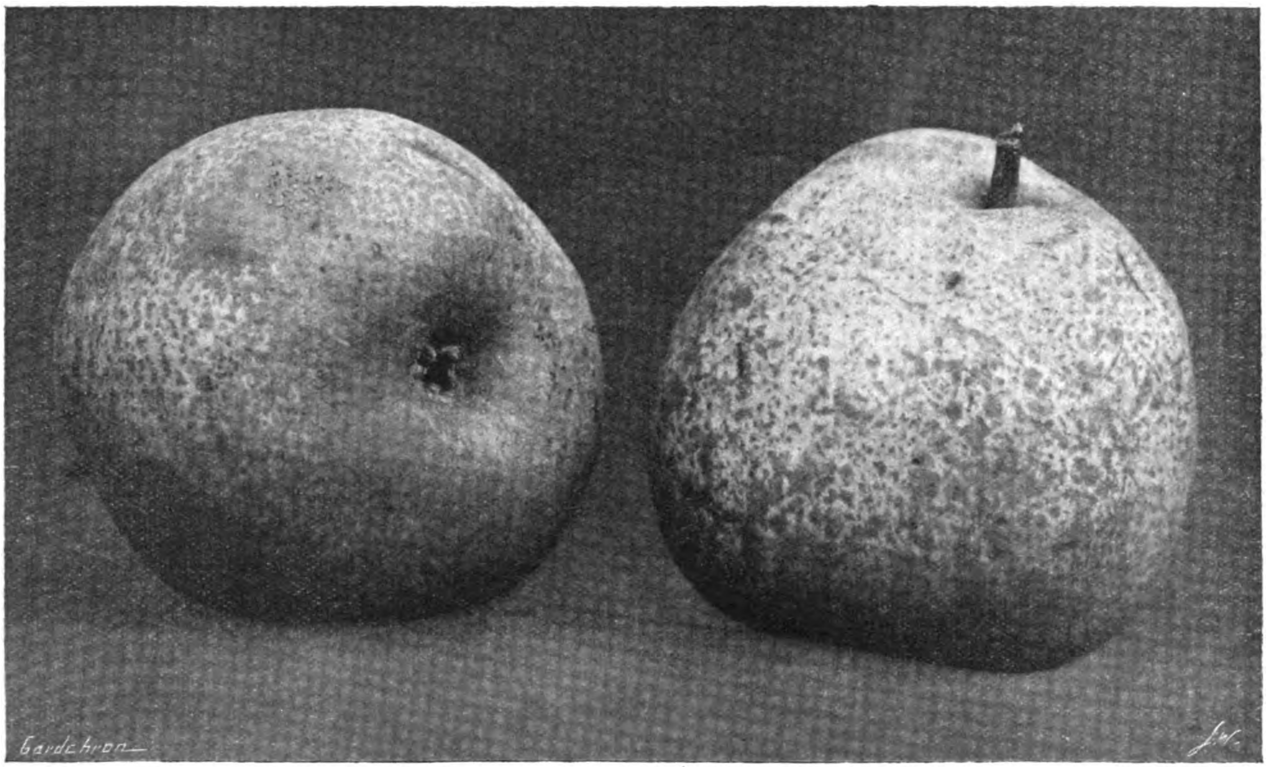

FIG. 5.—PEAR ADMIRAL GERVAIS.

FRUIT REGISTER.

PEAR ADMIRAL GERVAIS.

I HAVE grown this variety of Pear for fifteen years and am much impressed with its good cropping powers, its vigour, and hardiness. Coming into season from January till March it fills a period when good Pears are rather scarce. Glou Morceau, Le Lectier, Blickling, and similar Christmas varieties are over and there is a distinct gap in many gardens until Passe Crassanne, Olivier de Serres, and Easter Beurré make their appearance. There is, therefore, I think, a need for Admiral Gervais.

As the illustration (Fig. 5) shows, this variety resembles in form the well known Easter Beurré. The flesh is fine, melting, very sweet, and richly perfumed. I cannot find any full record of its orign, but it was presented to the French Pomological Society by M. Clavier in 1902 and at once judged *très-bonne*. *E. A. Bunyard.*

APPLE DUKE OF DEVONSHIRE.

THIS excellent, late-keeping dessert Apple does well as a standard tree. The fruits are of medium size; the skin is pale yellow with a dull red cheek, the surface slightly strewed with russet. The eye is large and open; the stalk short; the flesh is yellowish, crisp, juicy, rich, and sweet, and has a fine aroma. This valuable late keeper should be planted as a bush in most gardens. *Pomona.*

APPLE LAXTON'S SUPERB.

WITH reference to the paragraph in the issue of December 13, I should like to pay tribute to this very fine introduction, and can fully endorse all that the Northern Apple Culture Society have placed on record regarding its great merits. Its texture is excellent, its cropping qualities being first-class, and above all its flavour is most exquisite, being of the character that is so desirable in a really good dessert Apple. Laxton's Superb has proved of much interest to me since I first tasted it, and I feel convinced that once it becomes generally known it will rival Cox's Orange Pippin as a favourite dessert variety, especially as its season is likewise late and it is at its best at a period when a good juicy Apple is greatly relished. *Edwin Beckett, Aldenham House Gardens, Elstree.*

APPLE COX'S ORANGE PIPPIN.

THE seemingly exhausted condition of this variety has been exemplified in the trees this season. In well-cared for orchards and gardens during 1924 in parts of Hertfordshire, Hampshire and Surrey—whether the soil was heavy, light, loamy or sandy, in nearly all cases Cox's Orange Pippin could be picked out easily from other Apple trees by their sickly appearance, especially when autumn was approaching, the trees shedding most of their leaves long before the usual time, in fact some trees were bare of leaves by the end of September. I do not remember seeing this variety look so bad during late summers and early autumns as in the year 1924, while other trees in the orchards have appeared remarkably well. The Apples of the meagre crop gathered of this variety last season are very much smaller than usual. Trees trained in all kinds of shapes seem to be affected. I have been wondering if the early defoliation will effect next season's crop of this, our very best table Apple.

We are in the midst of pruning our bush Apple trees; they are most promising, including Cox's Orange Pippin, for a very fine display of blossom in the spring, and standards are just as hopeful as the bush trees. I have been asked several times of late by persons anxious to know, what is the matter with their trees of Cox's Orange Pippin. I have not been able to give a satisfactory answer, hence the reason of my writing, thinking thereby some reader may answer the question. *G. Carpenter, West Hall Gardens, Byfleet, Surrey.*

POTATO LEAF-ROLL.

THE so-called degeneration diseases affecting the Potato, such as Leaf-roll, Mosaic, Crinkle, etc., are attracting a great deal of attention in these days, and the first named forms the subject of a paper written by Dr. G. H. Pethybridge, in the *Journal of the Ministry of Agriculture*, Vol. XXXI, No. 9. This disease is of interest to growers, as the several obscure troubles noted above are giving rise to much concern.

Leaf-roll apparently exists wherever Potatos are grown, and in this country it is in the southern and drier parts that the disease is particularly severe, especially when locally-grown seed sets are saved for planting. Scotland — where, as is well-known, seed tubers are grown for the English market —unfortunately is not free from attack and consequently as the disease is disseminated by affected tubers the writer considers it may prove a serious handicap to the successful production of Potatos, especially those destined for seed purposes. While no variety can claim immunity, there is evidence that certain varieties are more subject to the trouble than others. Of early varieties for instance, Midlothian Early (Duke of York) and May Queen are highly susceptible, while British Queen (second early) and Up-to-date and King Edward (maincrops) are likewise liable to severe attack. Varieties showing marked resistance are Epicure, Witch Hill, Eclipse, and Ninety-fold (earlies), and of later varieties, Arran Chief, The Ally, Templar, and Great Scot are seldom seriously affected.

In 1921 the Ministry of Agriculture commenced a series of experiments which have been in progress for three successive years, and tubers from healthy crops have been grown side by side with affected tubers in the different localities, the cultural conditions being identical. The diminution in yield on the affected plots the first year varied from twenty-one to forty-five per cent., and during the two following years, 1922 and 1923, the average losses were forty-five and fifty-two per cent. respectively. Where partly healthy and partly diseased seed sets are employed the immediate losses may not be so high, but as an affected crop gives a higher percentage of seed-size tubers, it will be readily seen that the effects of the disease are cumulative and the ultimate losses are bound to be very great.

As the name of the disease indicates, affected plants bear leaves, especially the lower ones, which roll upwards and inwards from the margins of their leaflets, and the trouble may spread to the upper and younger leaves as the plant develops, so that the entire foliage may have a "rolled" appearance. When, however, one or more other allied diseases are present, it is most difficult to give a correct diagnosis; Dr. Pethybridge points out that additional symptoms are that the leaflets are frequently thicker, crisper, and drier than in normal plants, and the mid-ribs of the leaves frequently point upwards in a somewhat acute angle, giving the whole plant a stiff, V-like appearance. The affected plant, thus hampered in its manufacture of food, gives rise to tubers small in size and few in quantity, and there is as yet no known method of distinguishing in the dormant stage a healthy tuber from a diseased one. That the disease is transmissible and can be easily conveyed from diseased to healthy plants by means of sucking insects, such as aphides, came to be regarded as a recognised fact, and while, of course, much good would accrue from keeping aphides in check, especially when the seed sets are being sprouted, the author suggests that the systematic rogueing and early lifting of the crop are the most important factors which are likely to contribute to success in obtaining "leaf-roll free" seed sets.

A word of warning, too, is given to southern growers who are inclined to use own-saved seed sets the first year from Scotland, for it does not necessarily mean that a vigorous crop will give healthy seed tubers for use the next year, especially when the risk of transmission from diseased plants in the neighbourhood is very great. In such cases it is far more economical to commence each season afresh with healthy stock grown in the north and obtained from a reliable source.

ALUM AS A SLUG AND SNAIL DESTROYER.

IT does not seem to be generally known that ordinary alum is one of the most effective destroyers of slugs and snails, as well as one of the easiest materials to use for the purpose. Such materials as salt and soot, which are so often employed, are not reliable, as the animals can slough them off twice, or even thrice, before their destruction is brought about. Not so, however, with alum, for a few crystals of the powdered material sprinkled over the back of one of the largest snails will bring its death about in a very short time. They cannot slough it off, and once they come into contact with it they are doomed. It is only effective, of course, in the fresh state, and the sprinklings require to be renewed occasionally.

Out-of-doors powdered alum is very effective for the protection of young Lettuce or other tender subjects which form such tempting morsels to these vermin, and so far as I have been able to ascertain there is nothing among either flowers or vegetables which it seems to harm. I have repeatedly sprinkled the dry powder over tender foliage both when it was wet and when dry, and not the slightest harm resulted from it.

For stages, frames, and in fact all closed structures in which plants are grown it is invaluable for the purpose, as it can be very easily used. For the destruction of the pests in rubbish heaps and other of their hibernating quarters the best plan is to dissolve a good-sized lump of the unpowdered material in boiling water, and pour it over the rubbish or other material as hot as possible. This is much more effective than a cold solution, as the steam enters all the interstices of the material and every egg which it comes in contact with is destroyed. *A. D. Richardson, Edinburgh.*

PUBLIC PARKS AND GARDENS.

THE Corporation of Bournemouth has decided to apply to the Ministry of Health for sanction to borrow £700 for the purchase of land at the entrance of Alum Chine for public parks and pleasure grounds.

THE Town Council of Bridlington is to provide increased facilities for bowls and tennis at the Convent Field, the Avenue Recreation Ground, and the Bridlington Recreation Ground at a total estimate of £750.

THE Corporation of Blackpool has received sanction for the following loans:—Claremont Recreation Ground, £5,134; Public Park, construction of lake, golf course, etc., £25,000; and tennis courts, Italian gardens, etc., £35,000.

THE Corporation of Dewsbury proposes to lay out Carr House Recreation Ground at an estimated cost of £1,000.

THE Urban District Council of Hoole has resolved to apply to the Ministry of Health for sanction to borrow £1,250 for the construction of tennis courts in Westminster Park.

THE London County Council is recommended by the Parks Committee to approve an expenditure of £5,000 for the laying out and maintenance of the open space at Ken Wood, N.W.

A LOAN of £1,000 has been sanctioned by the Ministry of Heath to the Knaresborough Town Council for improvements in the Castle grounds.

IT has been agreed by the Lowestoft Town Council to purchase about forty-three acres of the Norminton Hall estate, including the hall, for a public recreation ground. The road-making, fencing and incidentals in connection with the scheme are estimated to cost £1,000.

IT has been decided by the Town Council of Montrose to lay down six lawn tennis courts on the vacant ground in Dorwood Place, at a cost of £2,330.

THE Newport (Mon.) Corporation proposes to purchase about sixteen acres of land adjoining Coronation Park for a public recreation ground at a cost of £4,494.

THE Urban District Council of Coulsdon and Purley has approached the Ministry of Health for sanction to borrow £5,800 for the purchase of land in High Drive for a recreation ground, and £1,150 for the purchase of land for the extension of the Council's Memorial ground.

The authorities at Ilfracombe have decided to lay out land near the Parish Church as pleasure grounds.

IT has been decided by the Town Council of Newcastle to expend £13,183 on work in the parks, including the conversion of twenty-five grass tennis courts into hard courts.

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Young Gardeners of To-day.—In reply to Mr. Clarence Smith (p. 413, vol. LXXVI.) on the observation that young gardeners should serve part of their time in each department of the garden, I ask whether he or any other gardener is prepared to take an outside journeyman into his fruit or plant-houses, or even into the kitchen garden, without he has experience of either. Even were it possible to adopt such a plan it would take up much of the head gardener's and foreman's time to see that the work was being properly done. It would increase the anxiety of those responsible, in-as-much as a vinery may be ruined for a year with half-an-hour of inexperience in such details as ventilation, watering, etc. The same is true of the plant-houses. Is it not easier for the head to devote an hour in the evening to the instruction of young gardeners who seek knowledge? I will not use Mr. Smith's word "prowl," as that word, to me, is not applicable to young gardeners. There is no reason for any young gardener to make a burden of his studies; he can always take a little leisure time if he wishes. Those who adopt the suggestion in my last letter will find it quite a pleasant change from their indoor studies; they will become more observant, and will understand that nature takes a very great part in the production of hardy fruits, vegetables, and flowers. In my early days of gardening I found time during my leisure to study botany, forestry, bees, birds, and animal life. *A. G.*

Onion Ailsa Craig.—*Pomona*, on p. 412, vol LXXVI., is very happy in calling Ailsa Craig Cranston's Excelsior's second name, but to think of Onions growing on Ailsa Craig, as he suggests! This rocky island is 1,114 feet in altitude, with a lighthouse, two fog sirens, and innumerable solon geese! Mr. David Murray, the reputed raiser of Ailsa Craig Onion, grew his Onions at Culzean Castle, where he was head gardener to the Marquess of Ailsa. Culzean Castle is beautifully situated on the mainland of Ayrshire. Murray was a noted gardener, and many good stories are told of his exploits at Shrewsbury and elsewhere with his famous Onions. *W. Cuthbertson.*

——Your correspondent *Pomona's* story regarding the origin of Onion Ailsa Craig (p. 412) seems to be lacking in authenticity, and I venture to remind him that Ailsa Craig is to all intents and purposes a barren rock frequented by innumerable sea birds, and otherwise inhabited only by the lighthouse keeper and the workmen employed at the quarry. It had no more connection with the Onion of that name than had Mr. Balch's Tomato Ailsa Craig. Many years ago the late Mr. Murray, gardener to the Marquess of Ailsa, told me that he had raised the Onion Ailsa Craig in the gardens of Culzean Castle, and on subsequent visits I saw him preparing the seed before dispatching it to a firm of wholesale seed merchants in London. Ailsa Craig is situated some nine or ten miles off the Ayrshire coast, and in the summer months it attracts many visitors, who are conveyed by steamer from Girvan. It was at Girvan that Tomato Ailsa Craig was produced, and the home of the Onion Ailsa Craig is in the neighbouring parish, a few miles further north. *J. Y.*

Cranston's Excelsior and Lisbon Onions.—Permit me to thank your correspondent, *Pomona* for his kindly reference to my statements respecting the origin of Cranston's Excelsior Onion; the additional facts are confirmatory and very interesting. Mr. Cranston gave me the information in 1886, when I called upon him as a representative of the Waite, Nash, and Huggins Company. Mr. Wilson confirmed the statement many years later. With regard to the sending of Excelsior to Scotland, the information given by me was obtained direct from Mr. C. M. Jackman, who bought the business established by Deverill and possessed all the papers relating to the deal. Further, replying to the friendly letter of Mr. Scarlett, in *The Gardeners' Chronicle* for December 6—the quantity of Lisbon Onion mentioned by me was that used by market gardeners who supply to the high-class restaurants the slender young plants about as big as pipe stems, which are used in salads, for which purpose the White Lisbon is the best variety. The so-called Egyptian Onions, which come from Levantine ports, may be grown from a large variety of Allium ascalonicum, a native of Palestine, and offered by some German seedsmen. The Onions I have seen growing in Egypt were more like the Prizetaker variety. *S. B. Dicks.*

The late Mr. R. Irwin Lynch.—Others are better fitted than myself to pay homage to the esteemed memory of one whose name will be associated for ever with Cambridge Botanic Garden, but as one of the many student gardeners who worked at Cambridge during Mr. Lynch's period of control, I should like to add my tribute of gratitude to his unfailing kindliness and interest in all that appertained to the welfare of those who served under him. I remember applying for entrance to Cambridge at a time when vacancies were not frequent, and when finally I received notice that I could commence duty I was in employment elsewhere and unable to leave at short notice. I wrote to explain my position, and received a reply to the effect that if I was anxious to study at Cambridge Mr. Lynch was quite willing to keep the appointment open for any reasonable length of time. I recall a time when one of the garden staff was sick and the kindly inquiries and comforts that came from the Curator. Students received every possible assistance and encouragement, and the Mutual Improvement Society enjoyed his warm support. Studiously courteous to even the youngest employee, Mr. Lynch was a firm disciplinarian, and I remember two occasions when sins of omission and commission took me to "the office." A humorous aspect of those interviews helps to brighten that memory. On the first occasion I commenced to excuse myself by "I thought ——." "You shouldn't merely think," was the reply," "you ought to know." On the second occasion, seeking to profit somewhat by past experience, I led off with, "Well, Sir, I didn't think ——" "That's just the fault," said my chief; "you should think." Cambridge Botanic Garden has sometimes been described as "Kew in a nutshell." That it justly deserves the description is due in very great measure to Mr. Lynch's work. A worthy son of Kew himself, he had the pleasure of seeing many young men who had served under him proceed to Kew, including his own son. His personal character, zeal for study, and willingness to impart his extensive knowledge to those who desired assistance, must have endeared him to all who were fortunate enough to know him. The example of such lives is a perpetual inspiration to younger men. *B. M., Ypres.*

Big Bud Mite attacking Hazels.—In answer to Mr. W. E. Harper's note (p. 393) on this subject, I well recall being told, some twenty-five years ago, that the big bud mite had been detected in swollen buds of the Hazel, and that experiments had been conducted to see if cross-infection from the Hazel to the Black Currant could be successfully accomplished. I do not know the results of these experiments, but from observations I have made, I believe that the Black Currant may become directly infected from affected Hazels. *Unit.*

——I was interested in Mr. Harper's note on page 393 regarding the big bud mite attacking Hazels. During the past two years I have been troubled with big bud among certain of my Black Currant bushes, but by adopting hand picking after the leaves have fallen I have been able to prevent the spread of this disease. The infestation had only appeared upon bushes which are growing within a few feet of a Hazel bush, and I noticed that the young growth around the base of this Hazel bush was also possessed of enlarged buds. Some of these buds were examined under a microscope and found to be full of mites indistinguishable from those found in the enlarged buds of the Black Currant. It would be interesting to know if these mites have been found in buds of trees other than the Hazel. I should be pleased to forward infected specimens of the Hazel and Black Currant to any one who would care to have them for examination. *A. S. Waller, East Lane, Dedham.*

Orange Peel as a trap for Slugs.—I was very interested in your reply to a querist regarding the control of slugs in the garden. (p. 398, Vol. LXXVI), and I may state that I have found pieces of Orange peel placed about the ground a very simple and effectual means of trapping the pest. *James Humphrey, Wonham Hill Gardens, Betchworth.*

SOCIETIES.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, December 19, 1924.—*Committee present:* The Rev. J. Crombleholme (in the chair), Messrs. A. Burns, A. Coningsby, J. Cypher, J. Evans, W. Giles, E. W. Thompson, and H. Arthur (Secretary).

First-Class Certificates.

Odontoglossum Titan (*amabile* × *l'Empereur*).—A fine flower, the sepals being blotched and evenly marked with rich brown, and the petals with markings of madder brown; the lip is large and flat. *Odontoglossum Gorizia var. Princess Mary*, the best of the type yet seen. From A. Hanmer, Esq. *Cypripedium Thomer* (*Lord Wolmer* × *Thora*). A large, well-shaped flower, with a round dorsal sepal that is lightly spotted; the pouch and petals are a rich shade. From P. Smith, Esq.

Awards of Merit.

Cypripedium Sandru (*Bucharilis* (*Buchanianum* × *aureum virginale*) × *Mrs. F. Sander*); *C. Sandru var. aureum*, *C. Dora* (*Eva* × *Golden Morn*), and *C. Troimer* (*Troilus* × *Lord Wolmer*). From P. Smith, Esq. *Cypripedium Titania* (*Charlesworthii* × *Mrs. F. Sander*). From Mrs. Bruce and Miss Wrigley.

Odontoglossum Conqueror var. Ruby. From A. Hanmer, Esq.

Groups.

Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns) staged a group for which a Silver-gilt Medal was awarded.

A Silver-gilt Medal was also awarded to A. Hanmer, Esq., Bury (gr. Mr. A. Burns) for a group in variety.

Messrs. J. Cypher and Sons, Cheltenham, were awarded a Silver Medal for a group of Orchids.

ROYAL SCOTTISH ARBORICULTURAL

[Aberdeen Branch.]

The annual meeting of the branch was held in the Douglas Hotel, Aberdeen, on Saturday, December 20. There was a capital attendance, and at the outset, Sir John Gladstone, Bt., of Fasque, the president, occupied the chair. The outstanding feature of the proceedings was the appointment of Mr. Charles S. France, the doyen of northern foresters, as president of the branch. This gentleman has done yeoman service for forestry in the north for many years.

Mr. George D. Massie, the secretary, submitted the nineteenth annual report, in which was narrated the activities of a very successful year, and a statement that the membership now stood at the satisfactory figure of 168. There is a total sum of £31 0s. 9d. standing at the credit of the branch.

The office bearers for the coming year were then elected. Mr. Charles S. France, Aberdeen, was unanimously appointed president, and on taking the chair declared it was the crowning honour in his life. Sir John R. Gladstone was appointed hon. president—a new office. The vice-presidents were appointed as follow: Mr. John Michie, M.V.O., Mr. S. J. Gammell of Countesswells, Captain R. J. Nicol of Ballogie, and Mr. Donald Munro, O.B.E., Banchory. Lord Glentanar, who recently joined the branch, was elected a vice-president in place of Mr. France. The retiring members of committee—Lord Forbes, Castle Forbes; Mr. James Ward, Keith; Mr. Neil McGregor, Glendye; and Mr. Charles Stewart, Durris—were re-appointed. On the re-election of

Mr. Massie as secretary, warm gratitude was expressed to him for the whole-hearted manner in which he had performed his duties and the fine work he had done in furthering the interests of the branch.

Mr. Thomas Tait, paper manufacturer, Inverurie, wrote drawing attention to the fact that motors used for agricultural purposes were charged with a five shillings tax, while tractors used for forestry purposes did not receive the same concession. He mentioned another point which, he thought, foresters should be made aware of. Naturalists, so-called, were hunting all over the countryside for the purpose of collecting eggs. The result was that many valuable insectivorous birds were being rapidly exterminated by these people taking away their eggs.

It was agreed that the branch bring before the parent society the suggestion that it should be made permissible to use a farm tractor for forestry purposes without incurring extra tax. Regarding Mr. Tait's point abou the destruction of the eggs of certain birds, it was agreed to ask the Forestry Commission, through the parent society, to draw up a list of birds that were "the friends of arboriculturists."

The newly-elected president, Mr. France, then gave an address on the pro - problems of timber valuation. It had to be borne in mind, he said, that all valuations were more or less an approximation of actual value; absolute accuracy was an impossibility. In the case of young and immature plantations, the many circumstances that might arise during the period ere such a plantation reached maturity were so problematical that it was absolutely impossible to arrive at a true estimate. Were the value fixed at the price likely to be received for a young plantation by the "present realisation," that would be giving the plantation away for nothing, and the whole expense of planting, supervision, rent of land, and accruing interest on invested capital would be gone, except such paltry sum as the plantation would realise. With regard to more saleable plantations, or those approaching, or those at maturity, to value these at their worth if at once put on the market was also fallacious, because it might be impossible to realise them immediately. The cutting of many such plantations might seriously interfere with the amenity of the property or remove necessary shelter and thereby diminish the agricultural or pastoral value of the estate. All these were considerations which must be taken into account in making a valuation. Mr. France then proceeded to detail the methods which he adopted in valuing the woods and plantations on an estate for sale, and in the valuation of standing timber for sale. In the last-mentioned case he counted and classified the trees under four classes when dealing with Coniferous timber. All trees estimated above twenty cubic feet he called "sleeper size," from ten to twenty cubic feet "timbers," from five to ten cubic feet "spurs"; all trees under five cubic feet as "props." In estimating the volume of timber he took a series of averages of the cubic contents of the first three classes, while in the case of the "prop" class he took the average height, as they were valued by the linear foot. All that remained to be done, having arrived at the mean average of each class, was to multiply it by the number of trees of each class, and the gross volume of timber was obtained.

A delightful and informative discussion followed the President's address, after which the large company lunched together under the chairmanship of Sir John R. Gladstone.

Mr. John Michie, M.V.O., expressed the thanks of the branch to Sir John for the paternal interest he took in the branch and all its affairs, and for the geniality and enthusiasm he had shown in the discharge of his office as president. Needless to say Mr. Michie's remarks were heartily homologated by the meeting.

TRADE NOTES.

A meeting of the Council of the Chamber of Horticulture was held on December 10, 1924, at 18, Bedford Square, London, Mr. W. R. Oldham in the chair.

The Secretary's report was read, and the chief points were as follow:—

A meeting of the Parliamentary Committee was held on October 17, 1924, for the purpose of considering the advisability of revising the Horticultural Legislative Programme and bringing the same to the notice of candidates at the General Election, October 1924. It was agreed that, in the interests of the horticultural industry, the Legislative Programme be placed before candidates, together with a list of arguments supporting certain items in the programme.

Meetings of the Technical Committee have been held on September 24, October 22, and November 19 last.

Mr. A. S. Galt, of Leeds University, was unanimously elected Chairman for the ensuing year, Mr. R. Seymour Cobley being unanimously elected Vice-Chairman.

At the meeting held on November 19, which was highly representative of scientific institutions, suggestions were discussed and resolutions passed as under:—

1. That a large increase in the number of questions relating to problems referred to the Technical Committee as to plant pests and diseases is desirable. As a matter of co-operation, the Committee shall then consult the appropriate centres thereon.
2. That circular letters be sent to the various horticultural institutions asking what special branches of research work are being undertaken.

It was generally agreed that if these resolutions were carried into effect the Committee would be assisting the work of research institutions, while, at the same time, the prestige of the Technical Committee would be increased.

A meeting of the Finance Committee was held on September 24 last, when the usual cash statement was submitted, showing a balance in the current account of £256 12s. 3d., and the sum of £300 on deposit.

Visit of F.H.P.I. Delegates.—A meeting of the Entertainment Committee was held on September 24, 1924, for the purpose of receiving my report and financial statement. After voting the East Malling Research Station the sum of £9 16s. 9d., being the cost of the lunch provided by that station to the delegates on May 29; also the sum of £5 for the purpose of presenting a suitable memento to Mr. G. Arluison as a slight recognition of his valuable work for the International Federation, the Committee agreed that the balance, viz., £23 5s. 8d., be left in the hands of the Chamber as a nucleus for a future similar event.

At the invitation of the Ministry I attended a conference on the 2nd instant to discuss a resolution passed by the General Assembly of the National Institute of Agriculture in May, 1924. The purport of this resolution was co-ordination of information relating to activities of an international character of the various organisations connected with agriculture.

The Secretary submitted correspondence with reference to the preliminary arrangements for organising a British exhibit at the International Flower Show, Haarlem, 1925. The Royal Horticultural Society had intimated its willingness to co-operate with the Chamber in organising a British exhibit, also to make a definite contribution of a hundred guineas towards the expenses. The Dutch Show Committee had promised facilities for transport and staging, but had stated that there was no space available in the Hall during the week April 24 to May 3, at which time France and Belgium were making a display, and the probability was that the International Horticultural Conference would also be held between those dates.

The Council agreed, if given adequate support by the trade, both in sufficient specimen flowers and contributions to expenses, that the Chamber shall proceed to organise a combined British exhibit, conditionally on space being given at the time when France and Belgium were showing, i.e., April 24 to May 3, and that these dates shall also be coincident with the International Conference of the Fédération Horticole Professionnelle Internationale.

With regard to the Safeguarding of Industries Bill the meeting discussed the question of horticulture and the proposed new Safeguarding of Industries Bill. It was recalled that the present Safeguarding of Industries Bill was drawn up in such a manner that horticulture was excluded from making any application under its provisions. The Chairman informed the meeting that the Horticultural Trades' Association had already made a request that horticulture be not excluded from the benefits of the proposed Bill. It was considered desirable to make representations to the Ministry of Agriculture and the Board of Trade in a similar manner.

It was generally agreed that the feeling as to obtaining legislation for the marking of foreign produce was still unaltered, and that producers would be glad to see legislation for the compulsory marking of imported produce with the country of origin.

Obituary.

James Short.—We have to record the death at Lahill Gardens, Newburn, N.B., of Mr. James Short, gardener at Lahill, who died on December 17 last, aged seventy-one years The funeral, which was largely attended, took place on December 20 at Newburn Cemetery.

David Melville.—We regret to have to announce the death, on December 15 last, at Kingsley House, Golspie, Sutherlandshire, of Mr. David Melville, who was for many years gardener at the Dunrobin Castle gardens of the Duke of Sutherland. Mr. Melville, who was advanced in years, was a well-known man in Scottish and other horticultural circles, and the gardens at Dunrobin had a well-deserved reputation as being among the most beautiful and well kept in the Kingdom. It may be remembered that Mr. Melville took a special interest in Snowdrops, which thrive admirably at Dunrobin, and he contributed a paper on the subject to the Snowdrop Conference of the Royal Horticultural Society in 1891. He found Galanthus Melvillei major, one of finest varieties of G. nivalis, in the grounds at Dunrobin. Mr. Melville was a capable all-round gardener, and very highly esteemed by all who knew him.

GARDENING APPOINTMENTS.

Mr. H. B. Osborne, for nearly five years Gardener to Miss Hartley, The Knowle, Morley, and previously Gardener to Lady Furness, Otterington Hall, Northallerton, as Gardener to N. E. Gates, Esq., Kirkfield, Baildon. (Thanks for 1s. for R.G.O.F. Box.—Eds.)

Mr. Harry Sherriff, or the past eight years Gardener to Major J. H. M. Kirkwood, D.S.O., Fairy Cross, Devon, as Gardener to Col. J. H. Pattison, D.S.O., Stradishall Place, Newmarket, Suffolk.

Mr. J. L. Eversfield, for the past four years and seven months Foreman (under glass) at Bodnant Hall, Taly-Cafn, North Wales, as Gardener to Major H. W. Buddicom, Penbedw Hall, Nannerch, Flintshire, North Wales.

Communications Received.—R. M.—S. W.—Mrs. W.—A gardener—H. W.—F. W. J.—H. C.—D. Bros.—H. C. L.

MARKETS.

COVENT GARDEN, Tuesday, December 30, 1924.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—EDS.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–18 0
—elegans	10 0–12 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	48 0–72 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Begonia Gloire de Lorraine—	
—32's	54 0–60 0
—48's	42 0–48 0
—60's	21 0–24 0
Cacti, per tray, —12's, 15's	5 0– 7 0
Chrysanthemums, 48's, per doz.	12 0–18 0
Crotons, per doz.	30 0–45 0
Cyclamen—	
—32's	72 0–84 0
—48's	42 0–48 0
Cyrtomium	10 0–15 0
Erica gracilis, 48's per doz.	21 0–30 0
— — 60's, per doz.	12 0–15 0
— — Thumbs, doz	6 0– 9 0
—nivalis, 48's, per doz.	24 0–30 0
— — 60's per doz.	15 0–18 0
— — Thumbs, per doz.	6 0– 9 0
—hyemalis, 48's	18 0–30 0
Hyacinths, in boxes—	
—white and pink, per doz. spikes	— 6 0
—blue	— 7 0
Marguerites, white, 48's, per doz.	— —
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Poinsettias, doz.	18 0–30 0
Pteris, in variety	10 0–15 0
—large 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 6
Solanums, 48's per doz	12 0–30 0

Cut Flowers, etc.. Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	15 0–18 0
—cuneatum, per doz. bun.	12 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 6– 3 0
med. sprays	1 6– 2 6
short ,,	0 9– 1 3
—Sprengeri, per bun.	
long sprays	1 6– 2 0
medium ,,	1 0– 1 6
short ,,	0 4– 1 0
Bouvardia, white, per doz. bun	12 0–15 0
Camellias, White, per box	3 0– 4 0
Carnations, per doz. blooms	4 0– 6 0
Chrysanthemums, White, per doz. blooms	6 0–12 0
—Yellow, per doz. blooms	4 0– 8 0
—Pink, per doz. blooms	4 0– 8 0
—White per doz. bunches	12 0–36 0
—Bronze, per doz. bunches	12 0–36 0
—Pink, per doz. bunches	12 0–36 0
Croton leaves, var., doz. leaves	0 9– 2 6
Daffodils, Trumpets, small	8 0–12 0
—best	30 0–36 0
—Soleil d'Or	10 0–12 0
Fern, French, per doz. bun.	0 9– 1 3
French Flowers—	
Chilies, per pad	8 0–10 0
Marigolds, per pad	7 0–10 0
Mimosa, per pad	8 0–10 0
—per bun.	1 3– 1 6
Narcissus, Paper White per pad	18 0–24 0
—doz. bun.	5 0– 6 0
Rananculus, double scarlet, doz bun.	18 0–24 0
—Carmine, per doz. bun	6 0– 9 0
Violets, Parma, per bun.	8 0–10 0
—single, per pad	10 0–16 0
Gardenias, per box, 12's and 18's	12 0–15 0
Lilac, Dutch, per spikes	6 0– 8 0
Lilium lancifolium album, per doz. blooms	4 0– 5 0
—rubrum, long, per doz. blooms	4 0– 5 0
—short ,, ,,	1 6– 2 6
Lilium longiflorum long, per doz.	10 0–12 0
short ,, ,,	10 0–12 0
Lily of the Valley, per doz. bun.	18 0–30 0
Orchids, per doz.	
—Cattleyas	24 0–30 0
—Cypripediums	5 0– 7 0
Prunus triloba (Dutch), per bun.	1 0– 1 6
Richardias (Arums) per doz.	9 0–11 0
Smilax, per doz. trails	2 0– 3 0
Tulips, on bulbs, per doz.	12 0–18 0
—cut, specials, per bunch	1 6– 3 0
Wm. Copland, per bun.	4 0– 6 0
Violets, per doz. bun	2 6– 8 0

REMARKS.—There is a plentiful supply of flowers and foliage, and Chrysanthemums have cheapened in price mainly owing to the bad conditions of the flowers, spray stuff generally being very poor. Forced Tulips are in good demand, and supplies are daily increasing and prices for early varieties such as Mon. Tresor and La Reine are easier; the first blooms of W. Copland Tulip have made their appearance and sold readily at between 4/- and 6/- per doz. blooms. There are ample supplies of French flowers and foliage, and Mimosa is cheaper owing to increased quantities. The demand for foliage is not so brisk, although prices are well maintained.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	— —
—Best	3 6– 5 0
—Others	1 6– 3 0
—Madeira, per box	3 0– 5 0
Beets, per cwt.	4 6– 5 0
Cabbage, per tally	3 0– 4 6
Cauliflowers, per doz.	3 0– 4 0
Celery, best, washed, per bundle	— 2 6
—Second	0 8– 0 9
Chicory, per lb.	0 3–0 3½
Carrots, per cwt.	3 6– 5 0
Cucumbers, per doz.	24 0–36 0
Endive, English per doz.	1 0– 2 0
—French	2 0– 3 0
English Asparagus—	
—First	10 0–12 0
—Best	6 0– 7 0
Batavia	3 0– 4 0
Greens, per bag	1 0– 2 0
Leeks, per doz. bundles	2 6– 3 6
Onions, English, per case	7 0– 8 0
—Dutch	7 0– 8 0
Lettuce, per dozen	1 6– 2 6
Onions, Valencia, per case	10 0–11 0
Parsnips, per cwt.	3 6– 4 0
Paris Green	10 0–12 0
Potatos, Canary Island, per case	15 0–16 0
Potatos, per ton—	
—Dunbars	— 240 0
—King Edward	210 0–240 0
—Whites	90 0–200 0
—(Imported)	100 0–150 0
—New Guernsey	1 0– 1 6
— — Scilly	0 4– 0 6
Rhubarb, Forced, per doz.	2 6– 3 6
—Canary Islands	10 0–20 0
Turnips, per cwt.	4 0– 5 6
Savoys, per tally	5 0– 7 6
Seakale, per punnet	2 6– 3 0
Spinach, per bushel	3 6– 4 0
Sprouts, per bushel	3 6– 4 6
Horseradish, per bundle	2 0– 2 6
Mushrooms, cups	2 0– 3 0
—boilers	1 6– 2 0
Sweet Potatos	2 6– 3 0

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Oregon Newtown	16 0–17 0
—Bramley's Seedling	8 0–12 0
—Californian Newtown	11 0–12 6
—British Columbian Jonathan, per case	12 6–14 0
—Delicious	12 0–14 0
—Winesap	11 0–12 6
—Baldwin	24 0–27 6
—Nova Scotia,	
—Greening	24 0–35 0
Bananas, singles	17 0–25 0
—doubles	17 0–25 0
Californian Pears—	
—Doyenné du Comice, ½ case	— 20 0
—Winter Nelis, per case	18 0–20 0
—Beurré d' Anjou	17 6–18 0
Chestnuts, Spanish	23 0–24 0
—Italian	27 6–30 0
Grapes—	
—Gros Colmar	2 0– 4 0
—Belgian Royal, per lb.	1 6– 2 0
—Canon Hall	8 0– 15 0
—Alicante	2 0– 3 6
—Muscats	10 0–15 0
—Almeria, per barrel	20 0–26 0
Grape Fruit, Cuban	16 0–20 0
—Bahamas	— 16 0
—Florida	— 21 0
Jamaica Oranges	9 0–14 0
Jaffa Oranges	15 0–16 0
Kent Cobs, per lb.	1 0– 1 2
Lemons, Messina	10 0–18 0
—Murcia	12 0–13 0
Oranges, Spanish	12 6–24 0
Pears, Belgian, per doz.	10 0–15 0
Pines	3 6– 6 6
Tunis Dates, per doz.	3 6– 5 0

REMARKS.—Christmas trade was fairly good in spite of rather unfavourable weather conditions. Supplies of all seasonable fruits were ample for the demand, and prices were at a reasonable level. Hothouse Grapes have been a good trade, large quantities of Grapes from Belgium keeping prices "popular," which, of course, is not to the advantage of the home producer. Apples are plentiful, mainly from the North American Continent. A few good fruits of English-grown Bramley's Seedling are meeting a good inquiry, but, generally, home-grown Apples are of poor quality just now. Oranges from Spain and other sources are comparatively cheap and in good condition. Grape Fruit from Florida, Jamaica, and Cuba is quoted at reasonable rates, and the increasing supplies that are now sold seems to point to the fact that more and more of the public are adopting the healthful custom of beginning the day with this excellent fruit. Pines are still costly, but their prices are expected to be easier in the near future. Forced vegetables, such as Asparagus, Beans, and New Potatos are moving steadily. Green vegetables are plentiful and cheap. Mushrooms are a quiet trade, as is usual at this time of the year. Tomatos from the Canaries have receded in values, both condition and demand being very moderate. New Potatos from the same source are also a slow trade. Belgian Chicory is cheap, and all salads are easier in price.

GLASGOW.

Prices of cut-flowers soared to high levels on Christmas week; the maximum figures were reached on Monday and Tuesday when disbudded Chrysanthemums were sold up to 5/- for 6's; Roses, which were in small supply, realised 12/- per doz. and as much as 10/- was paid for six Carnations; Lilac was in strong demand at 6/- per doz. sprays and good French Narcissus realised 16/- per pad; Mimosa, 14/-; other prices were: Hyacinths, best, 1/- for 3's; Tulips, 2/6 for 6's; Lily of the Valley, 2/- per bunch; while first arrivals of William Copland Tulips made 3/- for 6's. Christmas day being a holiday in England, flowers were scarce on Friday, but as the demand had fallen off considerably prices reacted and closed as follows:—Disbudded Chrysanthemums, large blooms, 3/6 to 4/- per 6's, Sprays, 1/- to 3/- per bunch; Carnations, 6/- to 9/- per dozen; Madame Abel Chatenay Roses, 5/- to 6/-; Yellow and Pink Tulips, 2/- to 2/3 for 6's; Narcissus, 3/- to 4/- per dozen; Lily of the Valley, medium, 1/- to 1/6, large, 1/6 to 2/-; Hyacinths, blue, 8d. to 1/2 for 6's, Pink, 10d. to 1/2; White, 6d. to 1/-; Specials, 8d. to 1/- for 3's and 1/- to 1/6 for 6's; and Lilac, 4/- to 5/- Dunstable-grown Chrysanthemums ranged from 1/- to 1/6 for Heston White and Winter Cheer; 2/- to 2/6 for Wilcox; 1/9 to 2/3 for Niveus, and 1/3 to 1/6 for Sunshine. Mistleto which sold up to 10/- per stone, receded to 6/- and Holly which was in abundant supply fluctuated from 2/- to 5/- per bundle. A good business was done in bulbs in pans, and Ferns brought from 1/6 to 2/- each.

Fruit supplies are exceptionally heavy and although the turnover showed a fair expansion from the previous week, prices were steady with an easier tendency in most grades of Apples. Canada Winter Greening averaged from 32/- to 35/- per barrel; Tomkin's King, 30/- to 37/-; Nova Scotia Tomkin's King, 28/- to 32/-; Wagner, 22/- to 27/-; Baldwin, 22/- to 25/-; Ribston Pippin, 18/- to 25/-; Virginia Baldwin, 27/- to 30/-; British Columbia Jonathan, 10/6 to 12/– per case; Oregon Spitzbergen, 10/6 to 12/6; Grieve's Ostley, 12/– to 13/6; Grieve's Golden, 10/– to 12/–; Newtown Pippin, 14/6 to 17/–. Winter Banana, 13/– to 15/–; Northern Spy, 11/– to 13/-. Delicious, 14/– to 16/–, and Rome Beauty, 12/– to 13/–. Oranges, especially Valencia supplies, sold freely from 15/– to 16/– (504); 14/– to 16/– (300); 13/6 to 15/6 (360); 14/– to 16/– (240); 14/– to 15/6 (200). Grape fruit remained steady at 18/– to 20/– for Jamaica brands, and 16/– to 19/– for Bahamas. Scotch Tomatos are now finished for the season, but Teneriffe Tomatos sold at 24/– to 28/–. Grapes were dearer at 2/6 and 3/6 for Gros Colmar and 3/6 to 5/– for Muscats. Winter Nelis Pears, 16/6 to 19/– for ½ case and 32/– to 35/– per case.

NEW HORTICULTURAL INVENTIONS.

SPECIFICATIONS PUBLISHED LAST MONTH.

225,383.—Poyser, G. W.—Lawn mowers.

202,647.—Balinsky, P. De.—Method of and apparatus for producing mist or fog for irrigating or treating crops.

224,346.—Lee, F. — Supporting devices for growing Peas, Beans, and the like.

225,346.—Gallas, M. —Weeding or hoeing machines.

ABSTRACT PUBLISHED LAST MONTH.

Novel Cover for Flower Pots.—Patent No. 222,796.—A cover for flower pots made up of segments and having holes through which the plant passes has been patented by Mr. J. Martyn, of 9, Addiscombe Grove, Croydon, Surrey. The cover comprises two or more portions, the edges of which are suitably shaped so that when assembled, apertures are provided in the cover. The cover may be flat or of any appropriate shape, and the parts may provide a single aperture or, for example, three apertures. The edges of the parts may overlap, and the covers may also be so constructed that a number of them, superposed, may together form a cover.

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STEWART AND CO., 13, South St. Andrew Street, Edinburgh.
ROBERT VEITCH AND SON, 54, High Street, Exeter.
DICKSONS SEEDS LTD., Chester.
DICKSON, BROWN, AND TAIT, Manchester.
DOBBIE AND CO., LTD., Edinburgh.
CLIBRANS, LTD., Altrincham.
E. WEBB AND SONS (STOURBRIDGE), LTD., Stourbridge.
SIR JAMES W. MACKEY, LTD., 23, Upper O'Connell Street, Dublin.
ARMY AND NAVY CO-OPERATIVE SOCIETY, LTD., Westminster, S.W. 1.
SUTTON AND SONS, Reading.

JOHN E. KNIGHT AND SON, Tettenhall Rosery, Wolverhampton.—Roses, seeds.
BRINKMAN BROS., Chertsey Lane Nurseries, near Chertsey, Surrey.—Fruit Trees and Roses (trade).
BARR AND SONS, 11, King Street, Covent Garden, W.C.—Bulbs, hardy perennials, alpines, etc.
AUSTIN AND MCASLAN, Glasgow.—Alpines, herbaceous plants, trees and shrubs, etc.
T. CARLILE, Loddon Gardens, Twyford, Berks.—Border Lupins.
LITTLE AND BALLANTYNE, LTD., Carlisle.—Trees, fruit, etc.
DICKSON AND ROBINSON, Cathedral Street, Manchester.—Seeds, Plants, etc.

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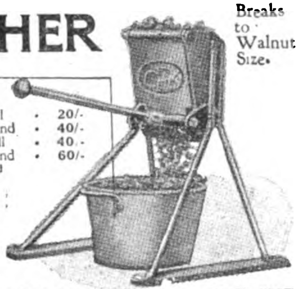

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HEAD GARDENER, WORKING, wanted for Elstead, Surrey; three other gardeners kept; good wages and cottage; personal references essential; applicants must reside within 50 miles of Guildford.—Apply by letter in first instance giving age, wages required, experience, etc., to C. H. GREGORY, Private Secretary, 15–51, Worship Street, London, E.C. 2.

GARDENER wanted, young man, SINGLE-HANDED; must have good all-round experience and be strongly recommended; herbaceous borders, lawns, orchard, small glass, and kitchen garden; State wages required, when disengaged.—E. W. LAVENDER, Farmfield House, Lutterworth.

WANTED, GARDENER, SINGLE-HANDED, help occasionally; well up in Kitchen and Pleasure Gardens; wages 50/-, no cottage. State particulars.—F. WEBB, Hanger Hill, Ealing, W. 5.

CAN any gardener recommend keen man as SECOND, take charge of fruit and plant houses; must be good with Carnations, Chrysanths., etc. Apply, by letter only, stating wages expected with bothy or cottage.—ABBOTT, Minterne House, Dorchester.

WANTED, FOREMAN, Inside.—Will any Gardener thoroughly recommend good reliable man; fruits, plants, house decoration; £2 1s., bothy, etc.—HALL, Bostock Gardens, Middlewich, Cheshire.

WANTED, good experienced MAN to take charge of glass, help given: wages 40/- and a good house, will be available in two or three months.—R. TAYLOR, The Gardens, Moor Close, Binfield, Berks.

WANTED, a good MAN for Inside and Out; experienced in plant growing Inside; wages 35/- a week, including duty, bothy, milk, and vegetables.—G. THURSTON, Papillon Hall, Market Harborough.

WANTED, YOUNG MAN with a good knowledge of alpine and hardy border plants.—State wages and experience to THE CURATOR, Botanical Gardens, Birmingham.

WANTED, a good MAN for rock, water, and wild gardens; thoroughly experienced in the cultivation of plants suitable for same; keen worker; no bothy; state age, references, and wages.—RANSON, The Wilderness Gardens, East Molesey, Surrey.

WANTED, SINGLE MAN, experienced in rock garden, shrubs, and herbaceous borders, etc.; bothy.—Apply, stating wages, references. to W. KING, Woodcote Grove House Gardens, Coulsdon, Surrey.

WANTED, KITCHEN GARDENER; married; must be energetic and well up in his work; wife to look after bothy; 35/- and rooms; wife paid extra; also good PLEASURE GROUNDS MAN, only experienced men, 34/-, bothy, etc.; duty every third week, 4/- extra.—RIDGEWELL, Grove Cottage, Great Bookham, Surrey.

WANTED, a good MAN for Vegetable and Kitchen Garden, to rear and look after poultry; wages 45/-; no house.—WILKINSON, Pinewood Lodge, Oxshott, Surrey.

WANTED, good MAN for Outside; 38/- per week and bothy, with attendance.—Apply. G. PENK, Abbeystead Gardens, near Lancaster.

WANTED, JOURNEYMAN for plant houses, must be good grower. State experience and wages required, with bothy.—P. A. J., Box 14, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, JOURNEYMAN, age over 22, Inside and Out, with some experience in raising Rhodos., Hardy Shrubs.—Apply, stating age, full experience, etc., to R. RYE, Castle Kennedy, Wigtonshire.

THOROUGHLY experienced JOURNEYMAN wanted for houses; bothy. Wages, refs. (copies).—H. CROWE, Dingley Hall Gardens, Market Harborough.

WANTED, YOUNG MAN, 18-20, Outside; knowledge of mowing; bothy, etc.: duty: state wages required.—GARDENER, Rotherfield Park, Alton, Hants.

JUNIOR GARDENER wanted, to assist generally in Hotel Pleasure Grounds; live and sleep in.—Apply, stating wages required and when disengaged, to A. J. VINCE, Rye House Hotel, Hoddesdon, Herts.

WANTED, GARDEN-HANDYMAN, whose wife or daughter can do housework; both experienced; no encumbrances; live in.—Apply JOHN PORTER, Cromhamstone, near Aylesbury.

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WANTED, a WORKING FOREMAN with first-class experience with Roses, to take charge of outside department of Rose growing. Only men accustomed to handling Roses in quantity need apply. Applications containing full particulars of previous experience, age, and wages required, to B. R. N., Box 21, 5, Tavistock Street, Covent Garden, W.C. 2.

EXPERIENCED WORKING FOREMAN required for Landscape Gardening; Watford district; lawns, drives, paving, dry walling, etc.—Write stating experience, wages required, etc., S. E. C. Box 1, 5, Tavistock Street, Covent Garden, W.C. 2

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WANTED, experienced CARNATION PROPAGATOR and GROWER, with knowledge of Tomatoes, Chrys., etc., preferred, but not essential: must be good controller of labour and qualified to take charge of nursery if required; good opportunity to the right man; single preferred.—State age, wages, and experience to PROGRESSIVE, Box 4, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, MAN experienced Chrysanth., also Valley and Lilium forcing, for general nursery.—State qualifications and wages required, to J. F. SPENCER & SON, The Nurseries, Hockley, Essex.

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THE Gardeners' Chronicle

No. 1985—*SATURDAY, JANUARY* 10, 1925.

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Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 38·5

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, January 7, 10 a.m.: Bar. 30·6 temp. 43°. Weather, Fine.

Youth and Age in Plants.

The majority of plants pursue the even tenor of their way from youth to age without vouchsafing to any but the most observant that they suffer from any of the "growing pains" incidental to the growing up of human youths. It is true that there is often to be seen a big break in continuity between the germinating seed and the newly-established seedling. The first efforts of the seedling in the way of leaf formation are but feeble, and from them the scale leaves only result. With the vigour which comes to the establishment of independence the first rough leaf is formed, and often enough it is of mature form like unto all the leaves which will be produced thereafter. Another break of continuity which marks a tide in the affairs of plants may be observed when the plant becomes adolescent—ripe to flower. At this period also the flower-bearing branches, intent, as it were, on their business, all but forget that it is customary for a branch to bear leaves, and only produce perfunctorily, one or two mere rudiments of leaves which the botanist calls bracteoles or prophylls. Some Orders of plants, the Cruciferae, for example, give up the pretence altogether, and their flowering branches—without respect for the tradition that branches should bear leaves- produce their flower buds without any preliminary production of prophylls. The turnover from vegetative to flower-bearing state, which must undoubtedly be accompanied by widespread change in the whole plant, takes place often with effortless ease. So smooth is the passage from vegetativeness to floriferousness that even now little or nothing is known of the inward change which leads to the outward grace of flowering. There are, however, plants which, as is well-known, take a long time to grow up—as measured by their flowering—and others which never grow up at all. The once-flowering Palms, Agaves, and the like, which go on living and growing in leisurely fashion for long terms of years, then flower, fruit, and die, are instances of the former. Many New Zealand plants which have juvenile non-flowering forms and the Retinosporas—permanent juvenile Conifers—are among the many well-known examples of the latter. What makes the once-flowering Palm at long last reach maturity, and what causes it to die when it has set its seeds, are alike unknown. Some say that the trees are worn out by the heavy work of seed and fruit production, but this is only an example of the all too frequent application of the obvious. It is more likely a case of plant suicide ; and all the yearly deaths of annuals may well prove to be so many examples of self immolation in the interests of the race—"The individual withers and the world grows more and more." There is much in the anatomy of herbs and herbaceous perennials to suggest that they are not the sort of stocks whence perennial trees evolved, but rather that they are degenerate members of races which once enjoyed the stature and status of long-lived and frequently-flowering trees. The world went very well then, in that far-off time when most Dicotyledons and Monocotyledons enjoyed, as is supposed on this hypothesis, a tree-like habit. But as climate evolved, becoming more unequal over the face of the earth, tree forms of vegetation were confined to the districts with constant water supply ; from the other areas, as trees, they were banished. Some "went out" for good and all, others began to take a lower place, until at last what was once a tree may now be the ephemeral and minute herb which springs up, matures, bears flowers, and ripens seeds within the space of a few weeks. Anyone who tends plants may observe signs—it may be slight, yet nevertheless sure, that fertility is not a mere inevitable event which ensues from lapse of time. An interesting instance of the peculiarity of the state of a plant with respect to flower bearing is described by Mr. L. B. Stewart in the case of a species of Gardenia.* A cutting from the main vertical stem of the plant goes on growing for twenty years or more without flowering, but if cuttings are taken from one of the side branches the plants which arise are of branching growth and flower regularly year by year. What they gain in floriferousness they lose in mere stability. For whereas the non-flowering, upright plants live on unflowered, the bushy, dwarfer plants which flower after a few years produce root suckers which, like a Rose stock overgrowing its scion, pushes up as an upright stem, that, unless removed, "sucks the verdure" out of the other, so that the bushy plant by its side ceases to flower and presently dies.

Our Almanac.—As a supplement to the present issue we publish *The Gardeners' Chronicle* Almanac for 1925, containing a list of the chief horticultural events of the year. Our readers should see that the Almanac is included with their copies of this week's issue.

French Chrysanthemum Society.—We are sorry that post-war conditions have compelled this active society to limit the publication of its official organ, *Le Chrysanthème*, to intervals of every two months instead of every month during the autumn and early spring seasons. We therefore get much news of a belated character, especially as the size of the publication is also limited. The current number shows that the membership roll is growing rapidly ; 1,322 members, inclusive of 62 affiliated societies, are now recorded. There is a short account of the Rennes Congress, but the text of the papers read there will appear in a subsequent issue. There are reports of exhibitions of the English National Chrysanthemum Society, one at Lyons and one at Tunis. Much other interesting and seasonable matter has been held over for lack of space.

The American Bulb Problem.—Judging by a letter from a well-known American firm of nurserymen in *Horticulture*, the possibility of America supplying her own bulbs that will flower satisfactorily seems to be a poor one. The firm in question, Messrs. R. and J. Farquhar, states that in view of the forthcoming embargo on the importation of Narcissi bulbs it decided to try some of the bulbs grown in California. These, which are termed "domestic bulbs," were stated to be 16 c.m. in diameter, and had every appearance of being of excellent quality. They were planted, twelve bulbs in each pan, with a similar number of bulbs from France of a size of 14 c.m., the French bulbs being not nearly so good in appearance The bulbs were forced in a greenhouse under favourable conditions and the French stock was in full bloom on November 24 last, when the growth of the domestic bulbs was only three inches high. On December 6 the French bulbs were passing out of flower and every one of the twelve bulbs were in bloom. The domestic bulbs showed two blooms out of twelve plants and seven of the plants were stated to be blind, having healthy foliage but no flowers.

Plant Life on East Anglian Heaths.—A study of *Plant Life on East Anglian Heaths*, by Dr. E. Pickworth Farrow, will shortly be published by the Cambridge University Press. The volume contains an account of some observations, problems and experimental work relating to the Ecology of the vegetation of the East Anglian heath district known as the "Breck Country."

Popular English Chrysanthemums in France.—We notice in the columns of our excellent French contemporary, *Jardinage*, that the "King" of the yellow Chrysanthemums in France during the past season was Mrs. R. C. Pulling. This remarkable seedling from the Ryecroft Nurseries, Lewisham, has certainly had a long life for a leading exhibition variety. Other Chrysanthemums of English origin that are stated by the same authority to have done well in France during 1924 are Undaunted and Salonica.

The Loder Rhododendron Cup.—It is gratifying to learn that the Loder Rhododendron Cup has been awarded by the Royal Horticultural Society, for the year 1925, to Professor C. S. Sargent, Director of the Arnold Arboretum, who, as is well known, has rendered great services over a long period in popularising the cultivation of Rhododendrons and Azaleas throughout the United States, and has been instrumental in promoting expeditions to search for and collect new species, many of which have been introduced to our gardens. The cup, which is of silver and beautifully engraved, was presented to the society by Mr. Gerald W. E. Loder in memory of his brother, Sir Edmund Loder, and the recommendation of the award is made by a joint committee of the Royal Horticultural Society and the Rhododendron Society. This is the first occasion on which the award has been made outside this country, previous recipients being the late Professor Isaac Bailey Balfour, Mr. J. C. Williams, and Mr. J. G. Millais.

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* *Transactions and Proceedings of the Botanic Society of Edinburgh*, XXIX., Part I., 1914.

Chrysanthemum Society of America.—The report of the twenty-second annual meeting of the above Society, held at Indianapolis on November 7 and 8, 1924, is just to hand. The contents may be briefly summed up in a few words:—The list of officers and executive committee are given, followed by a report of the annual meeting. The President's address and Secretary's report, together with some financial matters, are given next. Then follows the official scales for judging novelties and the conditions for submitting novelties. A list of the new Chrysanthemums introduced during the year, numbering forty-eight novelties, with brief descriptions, is also given. The roll of members now includes one hundred and thirty-seven names, not by any means a very startling result considering the years the society has been in existence.

Potatos and the Colorado Beetle.—We are informed by the Ministry of Agriculture and Fisheries that the 1924 crop of Potatos in the United States of America has been so plentiful that export markets for the surplus are being sought and small quantities have already been sent to this country. Unfortunately the Potato fields over large areas of the States are infested with the Colorado Beetle, a pest which is a serious menace to Potato growers in that country. On several occasions it has been carried by shipping into Europe, and in 1901-02 great alarm was caused when it was detected in a consignment of Potatos at Tilbury. It will be remembered that the Colorado Beetle established inself during recent years in a small district of France, and the Ministry of Agriculture and Fisheries then felt compelled to prohibit by Order the importation of Potatos from that area for so long as the pest exists. The importation of Potatos from the United States is attended with equal risks, and the Ministry feels it necessary similarly to exercise its powers under the Destructive Insects and Pests Acts, and to prohibit the importation of Potatos from the United States of America. An Order entitled "The Colorado Beetle Order of 1924" has accordingly been issued, under which the importation into England and Wales of Potatos grown in the United States is prohibited. The Order comes into operation immediately, but provision is made for the admission of any consignments that may already have been shipped.

"Kew Bulletin."—The concluding issue of the *Kew Bulletin* (No. 10) for the present year contains the title page, contents, and index for 1924. Mr. W. B. Turrill continues his notes on the Flora of the Gallipoli Peninsula, and lists no fewer than twenty-one species of terrestrial Orchids and twenty of Liliaceae. The type specimens of Passerina are enumerated by Mr. Thoday, and under Miscellaneous Notes there are generous appreciations of the late Dr. W. Botting Hemsley and the late Mr. James Britten.

Report on the Fertilisers and Feeding Stuffs Act, 1906.—The Ministry of Agriculture and Fisheries informs us that the report of the Departmental Committee on the Fertilisers and Feeding Stuffs Act, 1906 (Cmd. 2125), presented to the Minister of Agriculture and Fisheries in March last, recommends far-reaching alterations in the machinery to prevent adulteration and misdescription of fertilisers and feeding stuffs. One of the suggestions of the Departmental Committee was that, if the general proposals contained in the report were accepted, a further committee should be set up, whose principal function should be to frame schedules setting out the articles to which revised legislature should apply, the definition of each of these articles, and the particulars to be stated in the invoice and also in the description applied to the article in each case.

Mr. Charles H. Cook.—The newly appointed gardener to His Majesty King George at Windsor gained his early knowledge of gardening from his father, who was for many years gardener to F. S. Lowe, Esq., D.L., Kilshane, Ireland. His education was continued at Kilshane for a further period of three year under Mr. C. P. Lamb, and in 1904, Mr. C. H. Cook left Kilshane to become journeyman at Dalkeith Palace Gardens under Mr. James Whytock, V.M.H., with whom many first-rate gardeners have had an excellent training. Mr. Cook stayed at Dalkeith for nine years, serving in all departments and holding the position of foreman and decorator for two years and that of general foreman for the last two years of his stay. On the recommendation of the Duke of Buccleuch and Mr. Whytock, Mr. Cook was appointed gardener to the Rt. Hon. the Earl of Derby, K.G., at Knowsley Hall, Prescot, in 1914, and in this position he carried out a great many alterations and additions to these notable gardens. Lord Derby has frequently entertained King George, Queen Mary, Queen Alexandra, and other members of the royal family at Knowsley, and thus Mr. Cook came under the favourable notice of His Majesty, by whom he was appointed to succeed Mr. A. MacKellar in charge of the gardens at Windsor and Frogmore. While at Knowsley, Mr. Cook became an active supporter of the Gardeners' Royal Benevolent Institution (Liverpool Auxiliary), and on leaving the Liverpool district, the members of this branch indicated their appreciation of his excellent services and his many good qualities by entertaining him to dinner, presenting him with a handsome travelling case and a gold mounted, suitably inscribed umbrella, and by making him a life member of the branch.

MR. CHARLES H. COOK.

"La Revue Horticole."—Many of our contemporaries at home and abroad are feeling the effects of post-war increases in the cost of labour, materials, etc. *La Revue Horticole*, which is just concluding the ninety-sixth year of its existence, has been compelled to announce that from and after January 1, 1925, its subscription for France will be raised from 20 francs per annum to 24 francs, and for foreign subscribers from 22 francs to 30 francs. The half-yearly subscriptions will be 13 francs and 16 francs respectively. Our Parisian confrère appears regularly on the sixteenth of every month. A coloured plate and illustrations in black and white adorn the text, which is still printed as nicely as ever.

"La Tribune Horticole."—The first number since the war of *La Tribune Horticole*, the Belgian horticultural periodical referred to in our issue of December 13, p. 400, has now appeared, in its old size and format, under the editorship of M. Louis Gentil. Its reappearance is due, it seems, to the initiative and energy of the Fédération des Sociétés Horticoles de Belgique, which has acquired the paper as a useful organ of opinion and a medium for keeping its members informed on matters of interest to all. The Federation was founded in 1902, at Brussels; it began with a few thousand members, but now the membership stands at the excellent total of nearly fifty-eight thousand.

Beet Sugar Factories in the West of England.—The British Sugar Beet Society has approved a site for a Beet Sugar factory at Yeovil, while another company interested in the Sugar Beet industry proposes to establish a Beet Sugar factory either in Devonshire or Cornwall.

Big Loss on the Royal Agricultural Society's Show.—It was stated at the annual general meeting of the members of the Royal Agricultural Society that the show held at Leicester in 1924 resulted in a loss of £5,976. The attendance was 85,531 compared with 146,277 when the show was previously held in Leicester in 1896. It is believed that the poor attendance was largely due to the counter-attraction of the British Empire Exhibition at Wembley. The exhibition in 1925 will be held at Chester, and the Council has again decided to vote £10,000 to the prize fund.

Our Continental Contemporaries.—The Christmas number of our Dutch contemporary, *Floralia*, arrived in an attractive, coloured wrapper, the title of the paper being printed over an artistic, conventional design combining a snow-scene with a floral group, while the inside of the cover is occupied by a faithful representation of a fruiting branch of Cox's Orange Pippin Apple. The contents of the number are seasonable, the frontispiece showing a gardeners' cottage with the surrounding trees and gardens under deep snow. *Gartenschoenheit*, from Berlin, has a delightful Holly design in green and scarlet on a soft grey paper wrapper, and some very beautiful, coloured representations of old china with floral designs—a subject of perennial interest.

Proposed Memorial to the Late Mr. George Carver.—The members of the Professional Gardeners' Lodge of the Grand United Order of Oddfellows (Leeds), propose to erect a memorial to the late Mr. George Carver, who was Secretary of the Lodge for a very long period, and in this position as well as in other ways he did splendid service on behalf of gardeners, especially in the north of England. An appeal for funds is being made and subscriptions should be sent to Mr. J. R. Groundwell, Scott Hall Gardens, Buslingthorpe Lane, Leeds.

Honour for Professor R. H. Biffen.—Among the number of recipients of knighthoods in the New Year's Honours list, we are pleased to see the name of Professor Rowland H. Biffen, M.A., F.R.S., who for many years has held the chair of Agricultural Botany at the Cambridge University. Professor Biffen, as is well known, has paid much attention to the breeding of varieties of Wheat resistant to rust, and the new variety Yeoman II., which is being marketed by the National Institute of Agricultural Botany, is one of his introductions. He has also assisted horticulture by his work, on Mendelian lines, in Sweet Peas.

Investigation of Winter Thunderstorms, 1925.—Mr. S. Morris Bower, Langley Terrace, Huddersfield, writes:—In conjunction with the Meteorological Office, I purpose to continue, during this season, the annual record of winter thunderstorms hitherto made by Mr. C. J. P. Cave, of Petersfield; this can only be carried out with the assistance of observers in all parts of the country. May I, therefore, ask if any of your readers would be good enough to send me, on a post-card or otherwise, a note of any thunder or lightning which may be observed between January 1 and March 31, 1925, inclusive. A simple note of the date and time of the occurrence of thunder and lightning in any place and the direction in which the lightning was seen, especially at night, would be very valuable. Any additional information would be extremely welcome; as for instance:—(i.) An estimate of the severity of the storm; (ii.) The time when the storm passed overhead, if it did so, and how long it lasted; (iii.) Whether it was accompanied by rain, hail or snow; (iv.) Direction and strength of wind; change of wind, if any; (v.) Whether there was a change in temperature during the storm; (vi.) Any other observation which may be of particular moment. Reports from all parts of the country are desired, especially from Scotland, Ireland and the North of England. On behalf of Mr. Cave, I should like to take this opportunity to thank very heartily those who last year made this investigation possible by sending their observations.

Appointments for the Ensuing Week.—Monday, January 12: United Horticultural Benefit and Provident Society's Committee meeting; Buxton Chrysanthemum Society's annual meeting. Tuesday, January 13: Royal Horticultural Society's Committees meet; National Dahlia Society's Committee meeting. Wednesday, January 14: Wimbledon and District Gardeners' Mutual Improvement Society's meeting. Friday, January 16: Orchid Club's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Paint for Inside of Greenhouses.*—I have read with much interest your observations on the effect of contrasted colours, to which I would suggest a practical corollary, viz., that the appearance of plants in a greenhouse or conservatory is greatly enhanced by a judicious tinting of the woodwork. I was led to this conclusion some time since by observing that almost all flowers appeared to peculiar advantage in a room whose walls are painted a very light yellow-green; and, acting upon this suggestion, I have had the interior of my greenhouse painted, as nearly as possible, the same colour, with excellent effect. The colour in question is a few shades greener than the yellow-green of the Primrose flower; in fact, a colour midway between the fresh leaf of the Primrose and its flower, is about the right tint. I find that the yellow generally used by painters fades, so that a slight excess of yellow at first is not objectionable. It is important that the tint should be a warm yellow-green, not grey or blue-green, which last is very objectionable. If the outside of the house be painted black the effect from without also is improved. It is curious to notice on removing a plant (say for example, Leschenaultia formosa) from a house tinted stone-colour to one tinted green, how much more brilliant its colours appear; so much so as really to give an appearanc of improved health to the plant. Should any of your readers adopt my suggestion, I recommend them to see that the green is not deadened with black, a favourite practice with painters. The green and the yellow must both be pure colours, mixed with white-lead only; and allowance should be made for a tendency in the yellow to fade. *J. R., Sevenoaks. Gard. Chron., January* 12, 1850.

Publication Received.—*Garden Improvement.* By T. G. W. Henslow, London. Dean and Son, Ltd. Price 15s net.

INDOOR PLANTS.

CEREUS FLAGELLIFORMIS.

Introduced from Peru in 1690, Cereus flagelliformis (Fig. 6) has been represented in gardens for a very long period and become one of the best known succulent plants. As it is easily grown, so long as water is given sparingly while the growth is more or less dormant and freely when new growth is being made, this species has become popular also as a plant for cultivation inside a sunny, cottage window, and quite good specimens of it may be seen in such positions in the west of England. The whip-like growths are somewhat pendulous, therefore this Cereus is frequently grown in a pan, pot, or basket suspended so that the stems show to advantage.

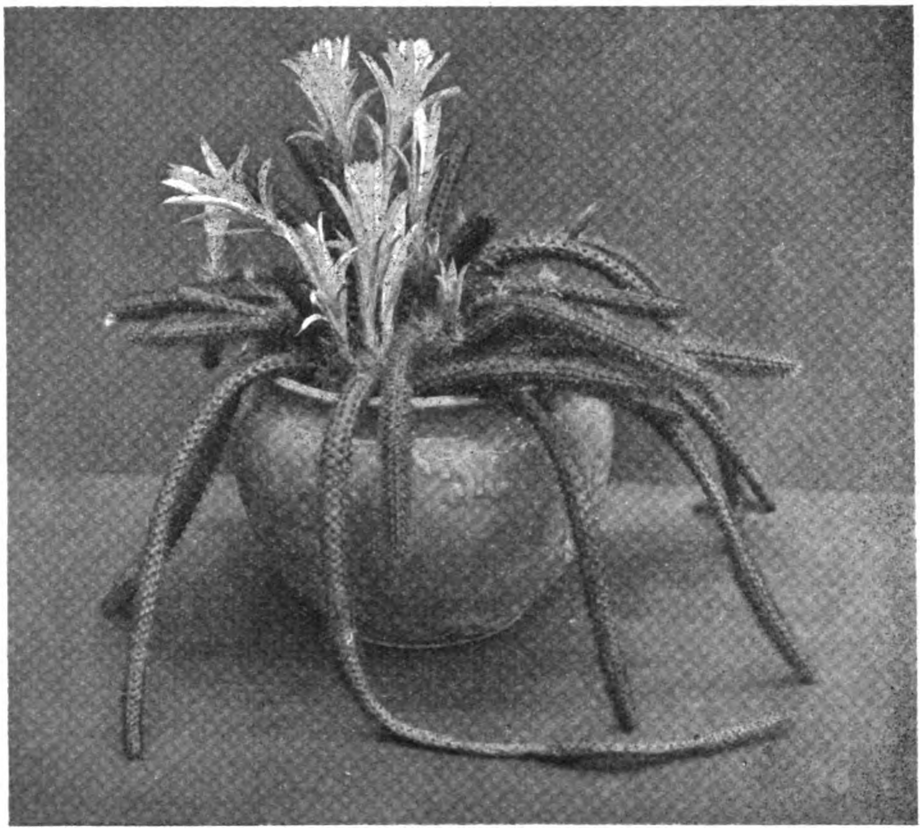

FIG. 6.—CEREUS FLAGELLIFORMIS.

A warm greenhouse suits it admirably, and, except when quite small, it should be grown in a pan suspended from the roof and planted in a mixture of loam, peat, sand and mortar rubble, over ample drainage material.

A sunny position always and a fairly dry atmosphere during winter, are other aids to success. The showy flowers are of a deep, reddish-pink colour, and when they are freely produced the plant is at once handsome and interesting.

Miller refers to Cereus flagelliformis in his *Gardeners Dictionary*, and the species was figured in the first volume of the *Botanical Magazine*, t. 17. The text accompanying the *Botanical Magazine* plate is as follows: "Grows spontaneously in South America and the West Indies, flowers in our dry stoves early in June, is tolerably hardy, and will thrive even in a common greenhouse, that has a flue to keep out the severe frosts. It is superior to all its congeners in the brilliancy of its colour, nor are its blossoms so fugacious as many of the other species. No plant is more easily propagated by cuttings; these Miller recommends to be laid by in a dry place for a fortnight or three weeks, then to be planted in pots filled with a mixture of loam and lime rubbish, having some stones laid in the bottom of the pot to drain off the moisture, and afterwards plunged into a gentle hot-bed of Tanners bark to facilitate their rooting, giving them once a week a gentle watering; this business to be done the beginning of July. It is seldom that this plant perfects its seeds in this country; Miller relates that it has borne fruit in Chelsea Gardens."

EUCHARIS.

Eucharis that have flowered during the summer will now be resting in a temperature of about 55°, and water should only be afforded the roots when the leaves flag, but not in sufficient quantity to saturate the soil. This treatment will suffice for about two months, after which the soil should be well soaked and the plants placed in a temperature of 62° to 65°; they should then throw up a flowering stem from each bulb and make very attractive specimens.

After flowering, the plants need to be removed to a house with a temperature of 70° by night and proportionately higher by day, and should be liberally treated until resting time arrives again.

The plants need to be well shaded from the direct rays of the sun during the hottest months.

The mite which attacks the bulbs is the worst enemy of the plant. Bulbs affected by it should be washed in an insecticide and, when thoroughly dry, repotted firmly in fresh soil. Bulbs that are very badly affected should be burned.

E. grandiflora is one of the best members of the genus and may be had in flower at almost any time; E. candida, E. Sanderi, E. Bakeriana, and E. Mastersii are other species in cultivation. *H. W. Stenning.*

The Week's Work.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Vitis.—The hardy members of the Vine family furnish us with a number of excellent ornamental, climbing plants for covering pergolas, trellises, fences, tree-stumps, etc. They make rapid and extensive growth and need to be kept in bounds by annual pruning. If this has not already been done the work should be carried out forthwith, as late pruning is detrimental to the plants. Probably the most handsome of the genus is V. Coignetiae, a Japanese species of great vigour, with large, roundish leaves, which change from dark green to a rich crimson, in the autumn. V. heterophylla humilifolia is a more slender Vine with variable leaves, bearing also small spherical fruits of a pale turquoise-blue colour which give it an additional attraction in autumn. V. californica and V. riparia are also good species, the small greenish-yellow flowers of the latter being remarkably sweet-scented with the odour of Mignonette.

The Rock Garden.—The continuous rainfall of autumn and early winter has not suited many of the choicer plants of the rock garden, and so soon as the surface soil is sufficiently dry it should be pricked over to promote aëration and help to bring about a drier condition. Tender plants making new growth may need protection during times of frosty weather, and this may be given by placing squares of glass over them when positions render this possible. Spruce branches afford sufficient protection in many cases, but whatever protecting material is used it should be removed immediately on the return of milder weather. A sharp watch should be kept for slugs, which sometimes do much damage as young growth commences and not infrequently cause the loss of plants. Most of the occupants of the rock garden derive great benefit from occasional top-dressings of rich soil, and weather conditions being favourable, this may be applied any time now after the surface has been pricked over and the plants cleaned. A supply of various soils should be prepared for the purpose, so that the requirements of the different classes of plants can be provided. Some subjects, such as Helianthemums, Iberis, Cerastiums and other strong growing plants have a tendency to encroach on their weaker neighbours, and these should be cut well back.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Platyclinis.—The graceful, spring-flowering Platyclinis glumacea is about to send up its new growths, and should be given a position near to the roof-glass in the Cattleya, or Intermediate house. As new roots appear, any necessary re-potting should be done. Well-drained pans that may be suspended from the roof form suitable receptacles. A mixture of Osmunda-fibre and a little Sphagnum-moss, both chopped into short portions, will suit this Orchid's requirements. The pretty P. uncata will now be flowering from its half-grown shoots, and should be afforded a somewhat liberal supply of moisture at the roots. The most suitable time for re-potting this species is shortly after the flowers have faded. The summer-flowering P. filiformis, being now at rest, should be lightly sprayed overhead occasionally in order to keep it free from attacks of red spider. All Platyclinis thrive well in the temperature advised for P. glumacea.

Miltonias.—Plants of the Brazilian Miltonias, which include M. spectabilis and its variety M. Moreliana, are commencing to develop new roots, and should be examined in order to ascertain if they need more pot-room, as the present is the proper season to re-pot the plants. Being dwarf-growing Orchids they are best placed in shallow pans, with wire handles attached for suspending them. In re-potting the plants, cut away all the old and useless back pseudo-bulbs, and make the growing pieces into fresh specimens; peg them firmly to the compost, as they will have but few roots to hold them steadily, and they do not succeed well if the roots are loose in the compost. As the new growths extend rapidly in every direction, they should be given a liberal amount of space. Such species as M. Regnellii, M. Clowesii, M. Russelliana and M. candida, being large growing plants, are best grown in pots or rather deep pans, and should be kept on the dry side all through the winter. The necessary re-potting should be attended to when new growth commences. A rather shady position in the Intermediate house is a suitable place in which to grow them. Miltonia vexillaria, M. Bleuana, together with their many hybrids, are growing freely, and the roots are very active. Sufficient water should be afforded to keep the Sphagnum-moss on the surface in a fresh, growing condition. All Miltonias, when making their growths, are subject to attacks of thrips, and it is essential for the future welfare of the plants to make periodical examination for the pests. When growing, the leaves are apt to become folded, and if they are not quickly released the plants are sometimes permanently injured. When it is found that a brown, damp-looking outer sheath is clasping the stem so tightly as to cause the young roots to push upwards instead of growing into the compost, the sheath should be removed in pieces without causing injury to the plants.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Melons.—To obtain ripe Melons early in the season, sow seeds in two-inch pots in a compost of sandy loam. Place two seeds, broad end upwards, in each pot, removing the weaker plant before potting the selected one in a five-inch pot. Plunge the pots in small hand lights over a hot-bed with a temperature of 75°. Cover the pots with glass and wipe the condensed moisture from the glass every morning. If the soil is in a suitable condition of moisture when the seeds are sown, water will not be required until after the seeds have germinated. When the seedlings are about two inches high, place them in a light, warm position near the roof-glass in a house having a temperature of 70° to 80° by day and 65° by night. This amount of warmth should be easily maintained without unduly heating the water pipes. Place a small stake to each plant to ensure upright growth.

Orchard House.—Continue with the work of cleansing, pruning, and training all permanent trees in orchard houses. Remove a few inches of the old soil, taking great care not to injure the roots, and substitute a liberal top-dressing of chopped loam, clean wood ash, and a six-inch potful of bone-meal to every barrow load of soil. Water the whole of the border thoroughly, for the soil should never be allowed to become dry or bud-dropping and other troubles will be sure to follow. Keep the ventilators open on all possible occasions to retard the trees as much as possible.

Tomatos.—Make another sowing of Tomato seeds and place the seed pans containing seedlings of former sowings near to the roof-glass, where they will be free from cold draughts.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

The Seed Order.—There is a wide choice of excellent and beautiful subjects for the stove, greenhouse, and conservatory which may be grown successfully annually from seeds, and it will be well to place the order for seeds of these in good time, possibly thus saving disappointment later. The thorough cleansing of the plant houses and their occupants should be undertaken on all favourable occasions. On wet days, and when conditions are not suitable for out-door operations, the outside staff may be usefully employed in doing this work. An inventory of the various manures, soils, insecticides, and sundry materials should be made, and steps taken to replenish the stocks if they are low.

Resting Bulbous and other Plants.—It is advisable at this time to make an examination of the stocks of resting bulbs, such as Caladiums and Gloxinias, as also such plants as Cannas and Fuchsias, and if any undue shrivelling is taking place it will be wise to apply some water to them. If it is decided to turn the bulbs out of their old pots and to temporarily store them again before they will be potted, it is essential that air should have free access to them. It sometimes happens that the inexperienced will closely stack up boxes containing bulbs, one above the other, a method which may prove disastrous.

Chrysanthemums.—The main batch of Chrysanthemum cuttings, if they were not propagated last month, should be put in now.

Subjects for Later Propagation. Such plants as Bouvardia, Plumbago, Euphorbia, Ruellia macrantha and others, having passed out of flower, should be allowed a period of rest, with little water at the roots, and be placed near to the light in order to get the growth matured, previous to cutting them back later, either to produce cuttings or to be grown on again.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

The Fruit Room.—Apples and Pears require looking over periodically, and should have all decayed fruits removed. Apples by this time need to be thinned to one layer, especially where the fruits are inclined to be soft. This precaution is not so important in the case of the very late varieties which are much firmer in the flesh. Where the fruit room is underground very little ventilation is needed, as the temperature keeps very even, whereas if built of slate or tiles, above ground, the temperature will fluctuate according to the outside conditions and in such conditions fruits do not keep well.

Pruning. Every opportunity should be taken to complete this work, especially in the case of Pears on walls, the buds of which will soon be swelling. Prune the growths to two or three buds, the upper bud, on upright growths, to point outwards from the tree, to prevent the latter becoming too thick in the centre. Cut away all ugly spurs and thin the growths where they are very dense. All old ties of string should be cut away and renewed with fresh string; medium, tarred fillis is very useful for the purpose. In securing the shoots in this way leave room for the bark to swell. If shreds are used in place of string, all nails and old shreds should be cleared from the wall, for they offer a hiding place for insects. When the trees are required for extension to furnish the wall, the new leaders on the tiers of branches should be shortened to fifteen inches or eighteen inches, and the main leader to one foot. The leaders of cordon

trees that have made strong growth, should be shortened to eighteen inches or a little less as required. Newly-planted trees growing against walls, that were planted last autumn, should not be pruned till later. The roots of these trees should be covered with half-decayed leaves to prevent frost or drying winds penetrating the soil.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Onions.—If large Onions are required, either for general use or exhibition purposes the seeds should be sown now in boxes in a compost consisting of three parts of fine loam and one part of good leaf-soil. Thoroughly water the soil with a fine rose can before sowing and allow it to drain. When the seeds are sown place the boxes in a house having a temperature of 55°. Cover the boxes with a sheet of glass and the glass in turn with paper until germination takes place.

Tomatos.—To obtain early supplies of Tomatos the seeds should be sown forthwith, in pans for preference, and germinated in a temperature of about 60°. There are many good varieties of Tomatos, and the choice of sorts is best decided by the individual grower, as requirements in the different establishments vary, some growers favouring the large-fruited varieties whilst others prefer fruits of a medium, marketable size.

Seakale.—Seakale should be forced in successional batches according to the demand. The crowns should be placed in large pots or boxes set in soil or leaves, placing an inverted receptacle over the plants so as to exclude the light. The crowns may be forced in a warm greenhouse, but if a Mushroom house is available this will be found the more suitable. Trim off all side roots before setting the crowns, cut them into lengths of seven inches or eight inches and place them in soil or ashes out-of-doors until planting time in the spring.

Carrots.—Early Carrots are always appreciated and if the first sowing has not yet been made, let this be done forthwith. Make a hot-bed of long litter and leaves about three feet larger all round than the actual size of the frames. Tread the materials firmly and after a few days, when the heat is on the decline, put sifted soil in the frames to the depth of one foot, and when the soil is warmed thoroughly and the temperature of the bed steady, sow the seeds. Successional batches should be sown later in cold frames before making the first sowing outside on an early border.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

The Rock Garden.—Attention should be given to this department during mild weather in case mice attack clumps of Aubrietia, Arabis, Phlox, and other trailing plants. These pests, if unchecked, will do a great amount of damage in a short time. A good trap is the only remedy, and from personal experience in a rock garden, I find the Figure-four trap, freshly baited, an excellent one. In times of frost examine all surface-rooting plants frequently to see that these are not lifted out of the ground, and make firm any that may have become dislodged. Any portion of this garden that, for various reasons, requires re-forming, may now be dealt with in order that the new formation is consolidated before planting in the spring takes place. Good drainage is necessary in districts where heavy rainfalls are recorded, and a very porous soil should be used to within a few inches of the surface: plenty of broken sandstone and granite chippings, also a fair amount of sharp, river sand, will assist in lightening heavy soils. If the soil is well-drained, its depth may be considerable, and for plants that root deeply a great depth is necessary.

Roses. — Arrears of planting should be completed without delay. Keep a close watch upon all the taller-growing sorts and if these are made loose by wind, the soil should be made firm around them.

Ground Work.—The digging of vacant flower beds and borders should be pushed forward in order that the soil may benefit from the effects of frosts, snow and wind.

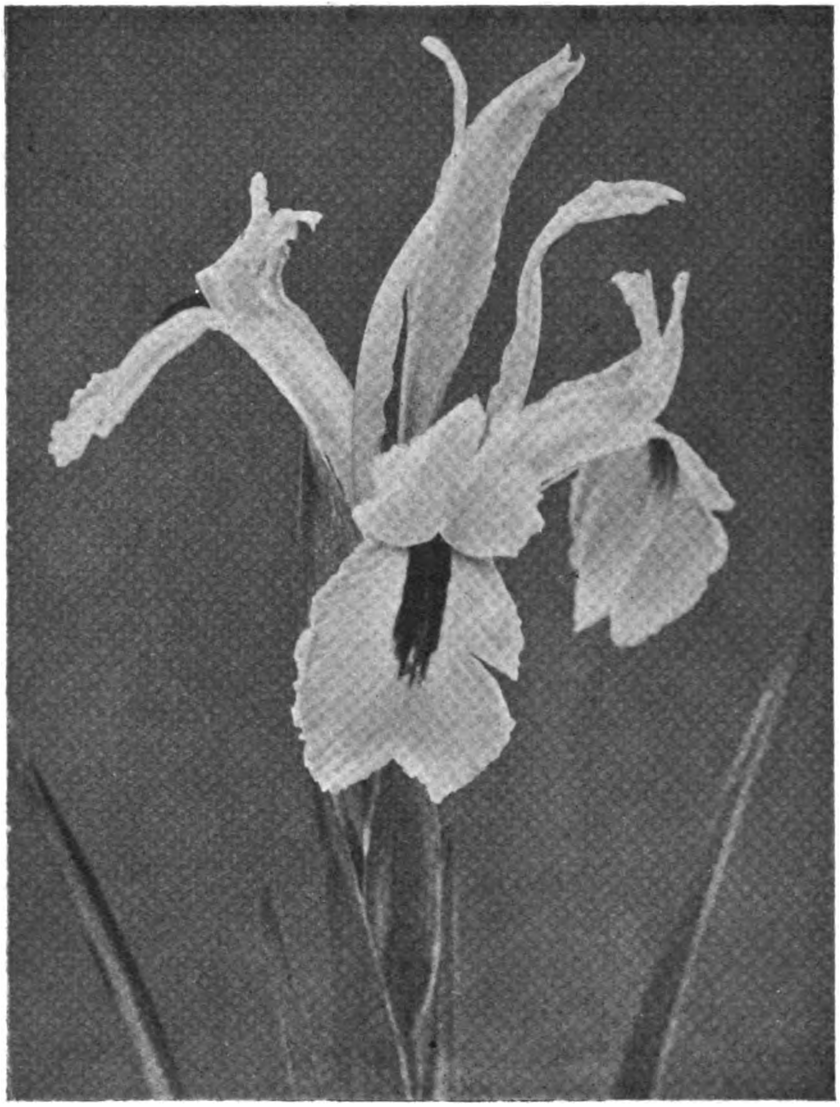

FIG. 7.—IRIS TINGITANA (see p. 25)

Winter Broccoli.—Plants that are showing heads should be lifted forthwith, for this year the growth is soft and frost would soon injure the heads. The plants may, for convenience, be pulled up with their roots and hung inverted in a cool shed, where they will keep fresh for a considerable time.

Rhubarb.—Where forced Rhubarb is in demand, another batch of roots may be introduced to heat. Gentle forcing will always be found to give the best results. Crowns in the open may now be covered, selecting the strongest and best. From four to six crowns are sufficient to cover at once. When the pots are in position cover them with material consisting chiefly of fresh leaves and light straw litter. Examine the pots frequently in order to see that the fermenting materials are not over-heating.

ALPINE GARDEN

RANUNCULUS GRAMINEUS.

I HAVE found this Buttercup a very delightful subject for any cool, light loam or the margin of the bog. Indeed, it is by no means fastidious as to soil provided the latter is not too dry, and it will be as happy in part shade as in full sun.

R. gramineus makes a somewhat stiff tuft of glaucous-blue, grassy leaves about eight inches or so in height and the flowers, which are borne on erect stems just above the foliage, are large and of a rich citron the yellow. R. pyrenaeus comes very close to above species in general appearance, but the flowers are milk-white. These Buttercups, in common with most of their tribe, respond to rich stimulants. *J.*

LINUM CAMPANULATUM.

THIS Flax is a very effective plant for the rock garden, and never appears better than when massed in considerable colonies. The plant grows to a height of from nine inches to one foot; the greyish-green, almost grey foliage is in pleasing contrast to the rich golden yellow flowers, which are produced well into the autumn.

A very free-growing, but not an obtrusive plant, L. campanulatum is easily cultivated; abundance of sunshine and a well-drained, ordinarily, good rooting medium easily fulfil its requirements. *Ralph E. Arnold.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUMS AS CUT FLOWERS.

Few other plants can compare with these easily-grown and long-lasting Orchids for the production of cut blooms, or as plants suitable for indoor decorations at this season of the year. There are large numbers of varieties suitable for the purpose, ranging from those with almost white flowers to those of deep shades. A comparison of the modern hybrids with the species at once reveals the progress made in this interesting family of winter-flowering plants. Whilst the colouring of the flowers has been improved, the size and shape of the blooms has also been developed to an extent that at one time would have been thought impossible.

The later introductions are necessarily expensive, but plenty of sorts suitable for indoor decorations and the production of cut flowers may be procured for a modest outlay, and grown quite easily in a moderately warm house by anyone without any special knowledge of Orchid culture. In the case of those grown for the supply of cut flowers, it is essential that they should be varieties which naturally produce flowers on fairly long stalks, and the plants should have robust constitutions.

Blooms with long stalks may be arranged in a graceful and artistic manner, whilst those with short stalks make better material for placing in bowls and other receptacles.

For dinner table decorations there are few subjects comparable with Cypripediums, but wherever possible it is advisable to keep to one variety. As an illustration, what is more beautiful than a table of the lovely yellow C. insigne Sanderae, amongst the species, or, say, the green and white C. Maudiae amongst the hybrids.

There are scores of varieties, adaptable for this purpose, which may be selected according to individual taste. Even a table decoration of mixed Cypripediums of the commonest forms is very beautiful, and when it is taken into consideration that with care the flowers will last for a month in a cut state, there is no wonder at their present day popularity.

Considering that these Orchids may be grown successfully in smoky districts and where fogs prevail, they are most suitable plants to cultivate in the environs of large cities and towns.

If grown for the special purpose referred to, it is advisable to inure the plants and flowers to a slightly lower temperature and a drier atmosphere than those in which they have been grown hitherto, so that they will not be subjected to a sudden change of conditions when introduced into dwelling rooms.

The winter-flowering Cypripediums may be made to cover a period of five to six months, and where a house is devoted to their cultivation there will always be one or more plants in bloom. It is possible to start flowering Cypripediums in the early days of October, and continue with a succession until the middle or end of March.

For the production of flowers in quantities it is advisable to grow them in batches according to their species or variety, as some Cypripediums produce their flowers at an earlier season than others.

The plants may be grown in an ordinary warm greenhouse provided there is a certain amount of humidity in the atmosphere during their season of growth, which is from the end of March to the beginning of October, when slightly drier conditions should be maintained. Having no pseudobulbs to support them they should never be allowed to suffer from want of water at the roots. *J. T. B.*

FLORISTS' FLOWERS.

SWEET PEAS FOR EXHIBITION.

The modern method of cultivating Sweet Peas for exhibition is a fascinating one. Those who would excel must be thorough in all they undertake. Half-measures, whether in the preparation of the soil or in subsequent treatment will not produce fine flowers. By fine flowers, I mean blooms of good colour and size, properly placed on stout stems. Large, coarse flowers, loosely placed on the stems, will not win prizes. Each bloom should just clear the one above it, the standards should be broad and nicely frilled, and the length of stem about fifteen inches.

The majority of Sweet Peas produce finer growth and flowers from an autumn than from a spring sowing. The seeds should be sown in boxes or pots about the middle of October: a suitable compost consists of two parts loam, one part leaf-soil (preferably from Oak or Beech leaves), and one part silver sand, all passed through a half-inch sieve and well mixed together. The seeds germinate much more freely when plenty of sand is used, and the plants stand well throughout the winter. If boxes are used, and those are preferable to pots as the roots have more room in the early spring, they should be clean and well drained. Three-parts fill the boxes with the soil, press firmly, and sprinkle with sand. Sow one variety in each box, pressing the seeds into the soil, spacing them about two inches apart, and covering them with soil passed through a quarter-inch sieve—about half-an-inch of covering soil will be sufficient. Label each box as it is finished and place the boxes in a cold frame, water them, and cover with newspapers to conserve the moisture. Keep the frame close for a few days, then admit a little air.

So soon as the seedlings appear, remove the paper, and gradually afford more air as they gain strength. Directly the plants develop a pair of leaves, allow them all the air possible, removing the lights entirely on fine days. Particular care must be taken at this period not to coddle the seedlings or they will become weak and less able to withstand bad weather. If the soil becomes dry give it a good watering, but overwatering must be guarded against or some of the seeds that are slow in germinating may rot. The frames should only be covered at night in the event of very sharp frosts, as the plants will withstand a fair amount of cold without harm.

Good Sweet Peas may be produced in almost any kind of soil. Light soil will be benefited by an addition of well-rotted cow manure in preference to horse manure, as this will help to conserve moisture during the warm, growing season. Heavy land should receive plenty of half-rotted manure and garden refuse to keep it open and friable. In either case, the land must be trenched deeply so that the roots of the Sweet Peas may ramify through it in search of food and find the necessary sustenance just at the time they need it most, i.e., July, August, and September. It is reasonable to assume that if the ground is well tilled in winter, there will be much less work in the matter of watering during a hot summer.

Another method is to take out trenches about two feet wide and three spits deep, well forking up the subsoil, and mixing with it some well-rotted manure and garden refuse, together with a good sprinkling of old soot. After forking and manuring this bottom spit, it is usual to leave the trenches open for a few weeks to allow the weather to sweeten the subsoil, then half fill the trench with the soil from the banks, mixing in more manure, soot, wood ash, and a little bone-meal. It is most important that the manure should be well mixed with the soil, otherwise, in a wet season, the plants will suffer from "streak" or grow much too coarsely. The trenches may now be filled in with the remaining soil; no manure is necessary in this layer, but a liberal dressing of soot and wood-ash may be spread on the surface to be washed into the soil by winter and early spring rains. The spaces between the trenches should be lightly forked up and no more need be done until the first week in March, when the surface of the trenches should be likewise forked over in readiness for planting when the weather is favourable.

Many and various are the methods used for supporting Sweet Peas, but for exhibition plants there is nothing to beat long Bamboo canes or Hazel sticks of good length. These should be placed about nine or ten inches apart and tied to a stout wire stretched from poles placed at each end of the row, and at intervals according to the length of the rows. The poles and stakes may be placed in position at any time, but certainly before planting. The plants are best grown in single rows placed about five feet apart, and preferably running North to South, but this latter point is not of very great importance so long as the position is an open and sunny one.

In due course the young plants in the boxes or pots should have the leaders pinched out to encourage them to break from the base, as it is this growth which produces the best blooms. Some prefer to pot the plants singly in small pots a month or so before planting time; but this is not absolutely necessary, although it is a good plan if the weather is so bad as to delay planting. Rather than let the plants become starved in the boxes or pots, and if potting is not possible, give them a little weak liquid manure or soot water, just to carry them on for the time being. The plants should be placed outdoors for a week or so before planting, covering them at night with thin tiffany should frost occur.

Select a fine day for planting, when the soil works well and is just moist. Carefully lift each plant from the box with as many roots as possible, make a deep hole with the trowel, and large enough to hold the roots without cramping them. Put one plant at the base of each stick, and label each variety as it is finished. If it is desired to grow two shoots on each plant, the planting should be done between the sticks. Some of the weaker-growing sorts, such as most of the orange-coloured varieties, should be restricted to one growth only. It is a good plan to water the plants if the weather is fine and dry so as to settle the soil about the roots.

Sparrows sometimes give trouble by pecking out the growing points, therefore it may be desirable to stretch a piece of fish-netting along the rows for a time. Stir the soil round the plants frequently as this promotes healthy growth. Tie each growth as it needs attention and at the same time pinch out the laterals and remove all tendrils. So soon as the plants are a foot or so high, they should be mulched with some strawy litter if the weather is warm, but if showery weather prevails mulching should be deferred. On no account mulch with heavy, close material, or bud dropping may follow. Mulching is necessary in hot weather, but it should always be done with material which air and sunshine can penetrate.

If planted in rich soil, as advised, Sweet Peas will not require much additional feeding until they are well in bloom. In hot, dry weather they should be thoroughly well watered once or twice a week, occasionally giving them some soot water or liquid manure and a sprinkling now and then of some approved artificial manure well watered in with clear water. There is nothing better than weak soot water to bring out the colours of the flowers, and this should be used about a week before the blooms are required for show purposes. All fully expanded blooms should be cut some few days before the date of the particular show.

and the plants fed as advised; the fresh crop of bloom will be much the finer. It is a mistake to allow the flowers to remain on the plants over long. They should be cut freely and used for indoor decoration, and no seed pods should be allowed to form.

Shading is most important where first-class blooms are desired, more especially in the case of the orange and salmon coloured varieties, and also most of the scarlet sorts, although great strides have been made in these, some of them, except in the hottest weather, being almost sun-proof. Light tiffany or old fish netting stretched above them will answer the purpose unless the sun is very fierce, when something heavier must be used, such as scrim or canvas.

Flowers which have to travel a long distance to a show may have to be cut the day before, and the best for this purpose are those with the top bud just opening and the bottom one fresh. Each bunch should be placed in a wide jar of clear water and stood in a cool shed for a few hours. Always take a few more blooms than are required, in case of accident. Some growers take their blooms to a show with the stems in water, but the flowers will travel perfectly well if laid out singly in hampers or boxes with plenty of fine tissue paper between them. Flat hampers or boxes that will hold two or three layers at the most are best. Pieces of thin wood or canes should be placed cross-wise in the boxes as packing proceeds to keep the top flowers from crushing those underneath.

At most exhibitions tier staging is provided for the Sweet Pea exhibits, and this should be covered with black velvet or white paper, or any suitable material the exhibitor may fancy. If vases are not provided they should be carried separately, and quickly filled with water ready for use. Carefully unpack the flowers, count them to make sure the requisite number is staged, and use the largest for the back row. Before filling the vases with water, they should be packed fairly tightly with rush stalks cut about four inches long; then place three or four pieces of foliage round the edge of the vase, the stalk of the leaf inserted between the rushes and the edge of the vase so that the leaf hangs gracefully over. Then the flowers may be put up, just pushing the stalks among the rushes about an inch or so deep, the vases being filled with water almost to the top.

In arranging the vases of blooms the adjacent colours should be as dissimilar as possible; for instance, light and dark pinks should not be close to one another, or scarlet and carmine, and so on. Provide a neat label for each variety, and leave the rest to the judges. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

KEW NOTES.

HARDY SHRUBS IN FLOWER.

Owing to the unusually moist, mild winter, many shrubs are in bloom out-of-doors at Kew.

The species of Hamamelis, such as H. mollis and H. arborea are almost in their full beauty of flowering. The variety of H. japonica known as Zuccariniana is more lemon-coloured than the type, and a little later in blooming. H. vernalis, with smaller, rhomboid-shaped leaves, and flowers of less size is not so forward, whereas H. virginica has finished flowering, except for a few solitary blooms.

In the same order Corylopsis spicata is showing pursy buds ready to open with the first sunshine.

Small, evergreen trees, eight feet to ten feet high, of Arctostaphylos Manzanita, scarcely ever fail to give their complement of unimpaired, short panicles of white to pink flowers in midwinter.

Christmas rarely dawns without flowers of Chimonanthus fragrans to herald it; this season they are unusually fine, but better still is the variety grandiflorus, with flowers of a much richer yellow. Several trees of Arbutus have been flowering for some considerable time; the one showing most colour is A. hybrida var. Milleri. Judging by the long, terminal panicles, there is prospect of a wealth of flowers on A. Menziesii later.

Erica carnea and its varieties will be a source of interest from now onwards.

Leafless bushes of Daphne Mezereum and its variety alba are conspicuous both for colour and fragrance, whilst Daphne Laureola var. Philippii, a small evergreen with greenish-yellow, inodorous flowers, is in bloom. The Glastonbury Thorn, Crataegus monogyna var. praecox has a good deal of blossom. So also has Lonicera Standishii, which scarcely ever fails to produce its creamy, sweet-scented flowers at this season.

Amongst Rhododendrons, the old R. Nobleanum has been in flower for the past fortnight or more; R. Batemannii, R. strigillosum, R. neriiflorum and R. racemosum also appear to be precocious in their blooming. R. dauricum is arrayed in small rosy-purple flowers and the taller-growing R. mucronulatum is likewise furnished but with larger flowers.

Other small shrubs in bloom are Spiraea Thunbergii, which is sprinkled with white flowers, and S. prunifolia. The brilliantly coloured flowers of Cydonia japonica arrest attention, also the varieties flore pleno and Aurora, both of which are exceedingly beautiful and fit for use in any vase. Prunus subhirtella var. autumnalis deserves all the laudations it has received; it has been in flower during the past three weeks and still remains first rate; the flowers appear up to four in a cluster with two or more rows of petals, which have just a flush of pink. *C. F. Coates.*

PUBLIC PARKS AND GARDENS.

Tennis courts and net-ball courts are to be provided at Boston Manor Park, Brentford, at an estimated cost of £2,730.

The Urban District Council of Church Stretton is applying to the Ministry of Health for sanction to borrow £800 for the purchase of land lying north of the pleasure grounds.

The Parks Committee of Manchester has been authorised to construct an open air bath at Cringle Fields and to level the paths around the bandstand at Brookdale Park, at a cost of £3,485, and the Public Health Committee has been authorised to plant a shrubbery around the Monsall Hospital at a cost of £1,150.

A triangular piece of land at the Tolworth (Surbiton) entrance to Alexandra Recreation Ground is to be fenced in and laid out with shrubs and grass at a cost of £150.

The Corporation of Grimsby has been recommended to adopt a scheme, estimated to cost £3,670, for the provision of tennis courts and a childrens' playground.

The Town Council of Brighton has decided to spend £18,000 on Western Esplanade improvements, which include the laying out of a sunken garden and a childrens' boating pool. Negotiations are afoot to acquire some three hundred acres of the Moulscombe estate for a public park.

Application has been made by the Town Council of Bury to the Ministry of Health for sanction to borrow £3,850 in connection with the scheme for laying out Clarence Recreation Ground, providing open air bathing accommodation, a paddling pool, etc.

Negotiations are in progress for the acquisition of land for the provision of a recreation ground for the Maxton and Tower Hamlets districts of Dover.

The Urban District Council of Hurst has received sanction from the Ministry of Health to borrow £2,000 for recreation ground purposes.

The Kingston-on-Thames Corporation has decided to lay Cumberland turf on the small bowling green near the ladies' pavilion at an estimated cost of £340.

TREES AND SHRUBS.

PINUS FLEXILIS.

In the Pine collection at Kew near the south-west end of the lake there is a small group of Pinus flexilis flanked with trees of Pinus radiata The latter Pine has grass-green foliage, and this makes P. flexilis, which has glaucous green leaves, more distinguishable. The trees are about sixteen years old and differ in height; at a rough computation the tallest is between twenty feet and twenty-four feet high with a girth the same number of inches. The main stem is still green, smooth, and with little sign of fissures. For the past few years it has made about two feet of growth annually, which must be considered an excellent rate of growth for a Pine supposed to be a slow grower. These Pines are growing in stiff, gravelly, yellow soil. The tree is pyramidal in outline, with branches in well defined whorls with a little inclined plane; the higher branches are at an angle of 40° to 60°.

The foliage is glaucous-green and remains on the branches for several years; the needles are in fives, and on the current season's growth are erect and fairly close to it, but the older foliage grows outright. So far only two or three cones have matured and I am uncertain as to whether they contained fertile seeds or not.

Seeing that the branches are so flexible it is reasonable to think that a character of flexibility would improve the quality of the timber, which is considered soft and easily worked. *C. F. C.*

EUPATORIUM WEINMANNIANUM.

Although it is not hardy enough for culture as a bush in the open, save in our milder counties, Eupatorium Weinmannianum might be more often planted in gardens. It appears to be able to withstand any climate moderate enough to enable one to grow the hardier Fuchsias without protection, and it has withstood 12° to 16° of frost here with but little injury.

E. Weinmannianum sends out shoots so readily and quickly from the base that it matters little if the tops do get nipped by frost, and whether they do or not we always cut the plants hard back in the later spring.

The new shoots grow away freely after this treatment and will sometimes exceed five feet in height by the autumn, at which season they break into many heads of creamy-white flowers suggestive of the Meadowsweet. The flowers are very fragrant and extremely attractive to butterflies. They are excellent for cutting and may be gathered from early autumn until the first severe frost. We grow this shrub in any good average border soil that is well-drained and it is a first-rate subject for massing. *J. N., Wales.*

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PROBLEMS OF WORM LIFE.

WHETHER he is interested in the subject or not, every gardener, florist, horticulturist and farmer is influenced, more or less, by the life history of the lowly worm. And that many people are profoundly interested in knowing something of their economy and modes of working is demonstrated by the wonderful sale of Darwin's book, some years ago, on *Vegetable Mould and Earthworms.* But it is a singular fact that though, as the late "General" Booth stated, more attention has been paid to worms than to the submerged masses of our fellow-men, we are still terribly ignorant of many points in their life-history. It is essential, therefore, that we should first of all be quite clear as to what we actually know, and then set out the problems which yet have to be solved. It would be of great service to science if, as the result of this study, careful observers would make accurate records of their own personal observations, and if possible, draw diagrams or sketches of the worms under conditions such as will be described and represented in the present article.

All the worms found in our gardens and pastures, pools, lakes and rivers, are reproduced in one of three ways. They either come, just as birds do, from eggs, they are multiplied by a process of budding or fission, or they may be propagated in very rare instances by means of "slips," as the process would be called if we were dealing with plants.

Taking the various methods in order, when it is desired to classify worms, the text-books often arrange them in two groups, viz. (1) those which are sexually reproduced, and (2) those which do not, as a rule, follow the sexual method. It is among tiny waterworms that this latter, or asexual method is dominant, and we begin with those. In spring and summer one may often see minute worms in still water swimming about gracefully or crawling up the stems of water-plants, while even smaller species may be collected moving about among the algae and slime. There are, indeed, two groups of these water-worms, known as Naids and Aeolosomas, which multiply without, as a rule, laying eggs. They give off young ones, not exactly in the way that a hydra buds, but by forming a kind of chain. If a Naid in process of fission is discovered, it may be that the chain contains two, three, four or even more animals all joined together, and in different stages of development (Fig. 8). In this case the foremost portion (A) represents the parent. It does not necessarily follow, however, that the other extremity is the youngest, since it is quite a usual thing for the latest baby to find its place between its mother and one of the other offspring. In due course the tail falls away in the form of a new worm, and so the process resembles in some respect that adopted by certain corms or bulbs, in which the parent still survives after the young have been slipped. As this method may be carried out all through the breeding season it is evident that quite a big family may be reared by fission, and as the young quickly become capable of further sub-division some of these species are very prolific.

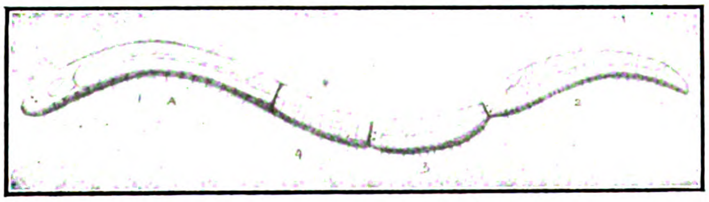

FIG. 8.—SHOWING REPRODUCTION OF WORMS BY FISSION.

A., Original or parent worm; 2, young worm ready to slip off; 3 and 4, later stages.

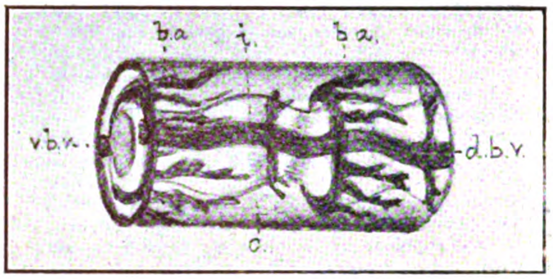

FIG. 9.—BLOOD VESSELS OF VARIEGATED WORM LUMBRICULUS VARIEGATUS.

b.a., Blind appendages; c., coelom; d.b.v., dorsal blood vessel; i, intestine; v.b.v., ventral blood vessel. × 20.

Here then is the first, or asexual process. But many species of Naididae which adopt this method are also known to produce ova and spermatozoa, so that they may be cross-fertilized and reinvigorated. All the water-worms of Great Britain which are of a higher grade than the Naids and Aeolosomas adopt this method, which is also that of the earthworms. There is, however, one very special case which must be looked upon as an exception, at least so far as this country is concerned. I refer to the variegated Lumbriculus, which is one of our commonest water-worms. It does not bud or multiply by fission, and in all my experience as a collector, extending over thirty-five years, I have only twice found an adult form. Yet I have taken it in ponds, lakes and streams, in every part of the country, from the dykes in Pevensey Marsh to the Tarns in Lakeland. It is evident that this is exceptional, since my fellow-workers in some Continental lands find it fully mature in great numbers. How then does this particular species multiply? It belongs to a family (Lumbriculidae) which contains ten or a dozen genera, only three of which are represented in our native fauna, and belonging to these three genera only five British species are at present known. There are three species of Stylodrilus: one Rhynchelmis has reached me several times from Ringwood, which is its only British habitat so far as authentic records go; and one species of Lumbriculus. This worm is peculiar in more ways than one. It is occasionally found encysted, and this process of encysting is connected with the unusual mode of reproduction. It was also noticed in 1847 that "this worm is remarkable for its vascular system. The dorsal vessel at each segment gives off a branch at right angles, which terminates in a digitate manner (Fig. 9) in caecal twigs, as Treviranus had already noticed" (Ray Society *Report on Zoology,* 1847, p. 510). This is what led to its being named the variegated worm (**Lumbriculus variegatus, O.F.M.**)

It was frequently observed by earlier collectors that "there is, in most specimens, an indentation, more or less deep, on some part of the body—the beginning, probably, of a separation" (*Catalogue of Worms in the British Museum,* 1865, p. 334); but the true explanation has been rarely afforded. It is now known, however, that in England this worm regularly multiplies by self rupture or division. If it is accidentally injured the parts continue to live, the head producing a new tail, the tail growing a new head, and the central portions which have neither head nor tail, giving rise alike to the one and to the other (Fig. 10). This was probably the worm upon which Bonnet, Lyonet, and others, nearly a couple of centuries ago, tried their experiments many particulars of which are given in a very unsatisfactory way in the last-mentioned work (*Catalogue of Worms,* 318 seq.). Naids often break asunder under examination, but, unless pressure is brought to bear upon them, the rupture only takes place where fission was already advanced.

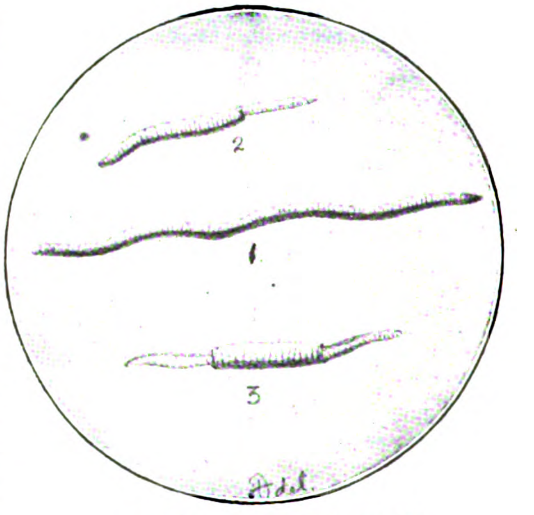

FIG. 10.—VARIEGATED WORM.

1, Entire worm; 2, head growing a new tail; 3, central.

The Variegated Lumbriculus is the only worm I have ever met with which can break up into small portions and yet continue to live and multiply. If earthworms are divided the head may grow a new tail, but the tail does not produce a new head, nor can the intermediate portions survive. Also it must be reaffirmed that worms do not grow together again when cut into pieces by the gardener's spade, and the knob is not a scar which results from this operation, but is the part of the body set apart for egg-laying, with special glands for secreting the cocoon and for other vital processes. This matter will receive fuller attention in the next article.

I may therefore sum up the results of our study thus far by stating that in the case of the lowliest forms of water-worms, reproduction is usually by fission. This applies particularly to Aeolosoma and the Naididae, as well as to a rare worm named Rhyacodrilus. But though, up till the present, a few of these creatures have never been seen to engender their young in any other way some of the higher forms have the usual sexual organs, and produce their offspring in the normal fashion by laying eggs. This applies also to all the higher water-worms, such as Tubifex and its allies, as well as to the pot-worms and earthworms. There is, moreover, one exceptional case in which the worm multiplies by division, each portion being able to grow a new head or a new tail. The Variegated Worm usually adopts this method of reproduction in England, though it has on very rare occasions been found adult. On the Continent it seems usually to follow the normal methods of generation, and forms cocoons or lays eggs.

In my next article I propose to deal with a few of the problems relating to this process of egg-laying; some of which have already been solved, while others still await solution. *Hilderic Friend.*

(*To be concluded.*)

BULB GARDEN.

BERMUDA LILIES.

The perfecting of the Bermuda Easter Lily, Lilium longiflorum Harrisii, is receiving close attention both from the Bermuda Department of Agriculture and the growers. All bulbs exported are subject to Government inspection and this is carried out in a most thorough manner. Only inspected and certified stocks may be exported, and field inspection is now under contemplation. During the past three years very marked improvement has been effected in the bulbs and the flowers. The majority of the growers have discarded inferior stocks, and the best growers are developing a very superior type of bulb by selection, and in a few cases by breeding.

At the present time practically all the Bermuda-grown bulbs of this Lily find a market in the United States of America, but many growers would prefer to sell "under the old flag," and are pressing the sale of the bulbs in Great Britain.

Bermuda Lilies were exhibited in bloom at the Bermuda pavilion at the British Empire Exhibition, Wembley, in 1924, and an opportunity was afforded growers to inspect them. The accompanying illustration (Fig. 11) shows a field of L. longiflorum Harrisii in bloom in Bermuda and indicates the robust and free-flowering habit of the strain now in general cultivation. I will gladly furnish any information that may be needed in connection with Bermuda Lilies. *E. A. McCallan, Director of Agriculture, Paget East, Bermuda.*

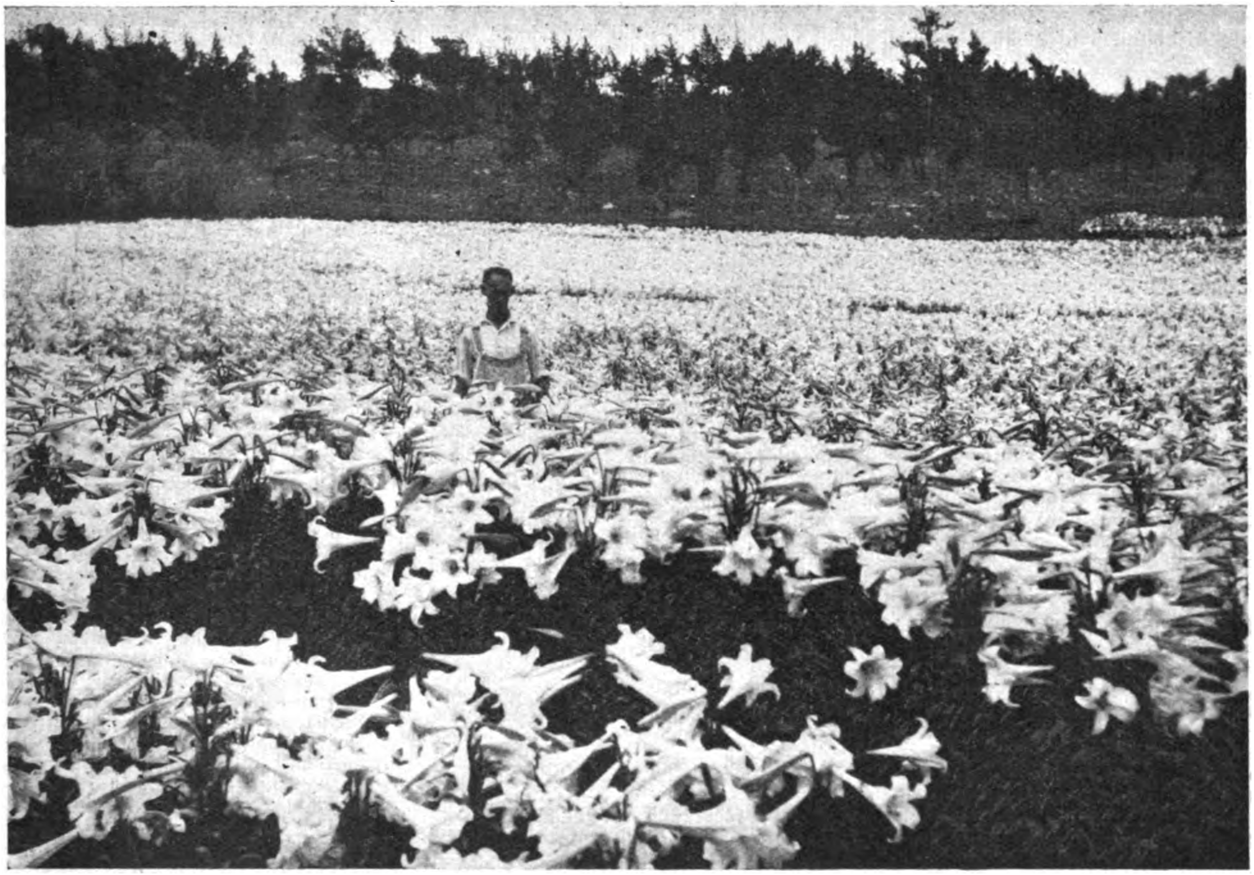

FIG. 11.—FIELD OF LILIUM LONGIFLORUM HARRISII IN BERMUDA.

CROCUS IMPERATI.

The appearance of this delightful Crocus impels me to write of its charms; this season it opened its flowers on Christmas day, earlier than usual, and they were most welcome. The dull exterior gives little indication of the charms of the expanded blossom; grey, with well-defined buff or brownish markings, a few gleams of sunshine will transform this into a glorious, open flower of Lavender or Lavender-blue. It has better lasting quality than most early Crocuses. The flowers are much finer in a cold frame or handlight, which protect them from driving rain and cutting winds.

In a sheltered, sunny nook in the rock garden this Crocus will increase and be an annual source of delight during the very darkest days of the year. *Ralph E. Arnold.*

IRIS TINGITANA.

Although the Tangierian Iris (Fig. 7) has been cultivated in British gardens for upwards of half-a-century it is only within the last decade that its merits as a winter-flowering subject for greenhouse decoration have been generally recognised. On their arrival the imported bulbs should be potted, or, if grown in quantity for supplying cut flowers, planted in boxes. Iris tingitana starts strongly immediately after potting, and during the early stages of growth it should be grown in a cool frame, which should be ventilated freely whenever the weather is favourable. When the flower buds can be felt at the base of the growths the plants may be removed to a warm greenhouse. They respond quickly to gentle forcing and, given the treatment indicated, successive batches will flower from early December onwards. Iris tingitana is a robust grower, from eighteen inches to two feet high, and the rush-like foliage and terete stems require no support. The spathes are usually two-flowered. The flowers, six inches across, are blue, with a wide yellow stain down the centre of the falls. *Fred W. Jeffery.*

FORESTRY.

INTRODUCTION OF THE LARCH INTO SCOTLAND.

In *The Gardeners' Chronicle* of 1922 (Vol. LXI., pp. 268 and 337, and Vol. LXII, pp. 25, 37, 56, 71, 85, 112, 141, 189, and 229), there was some discussion as to the date when the European Larch was introduced into Scotland, but more particularly as to when the Dunkeld Larches were planted. Since then a fresh fact has been discovered which throws a new light upon the question, and which shows that even the Dawyck Larches, which are believed to have been planted in 1725, cannot claim priority.

A few years ago, the late Mr. R. Glode Guyer, works manager to Messrs. Duncan, Flockart and Co., manufacturing chemists, Edinburgh, who had started a pharma-farm within the city boundaries, made a very thorough investigation into the history of the old Physic Gardens of Edinburgh*, and in January 1924, shortly before his death, he communicated the interesting information to *The Scotsman* (in connection with a correspondence on "The Larch in Scotland") that in Sutherland's catalogue of the plants in the Physic Gardens of Edinburgh, published in 1683, the Larch is included.

This interesting disclosure, although it does not throw any light on the year in which it was introduced into the Edinburgh Physic Garden shows that the Larch was growing in Edinburgh at least forty-two years before it was planted at Dawyck. The title of Sutherland's Catalogue is *Hortus Medicus Edinburgensis: a Catalogue of Plants in the Physical Gardens, Edinburgh*, by Mr. James Sutherland, Intendant of the same Gardens, 1683; and the Larch occurs in the list as "Larix B. P. Ger: Park: folio deciduo Conifera, I. B. The Larch Offic." It may be mentioned that at this time (1683) there were two Physic Gardens in Edinburgh—the King's Garden at Holyrood and the Town Garden at Trinity Hospital. *A. D. Richardson, Edinburgh.*

SUGAR-BEET IN SCOTLAND.

Results are now coming to hand of the trials, both on an experimental scale and on a commercial basis, which have been carried on throughout Scotland during 1924, in Sugar-Beet cultivation. So far these results tend to show that even in the north of Scotland the conditions generally are suitable for the production of this crop. Some two hundred acres were planted in Scotland during the year—from Carlisle to Inverness—so as to ascertain which districts would give the best results and the most suitable variety of Sugar-Beet. The areas planted were small, varying from half-an-acre to five acres. Two valuable points established are that the climate and soil of Scotland are perfectly suited to the growing of Sugar-Beet. Add to this the intention of the Government to subsidise the industry and there seems little reason why this branch of agriculture could not be considerably developed. Of course the sugar refiners are up in arms, and with a certain amount of cause, against the subsidy, contending that the growing of Sugar-Beet would displace other essential crops. To a certain extent this is quite true, but as the crops most likely to be displaced would be Turnips and Potatos, the contention is not so serious as might be thought. Beet pulp, with its highly nutritious value, would more than fill the place of Turnips as a cattle food. In short, there seems no reason whatever why Scotland should have to depend so much for its supplies on foreign sources.

Under the auspices of the North of Scotland College of Agriculture, experiments were carried out in West Aberdeenshire, where four varieties were tested on two farms, and in addition two trials of an extensive nature were made on two farms in co-operation with the Anglo-Scottish Beet-Sugar Corporation in order to test the commercial possibilities. In the case of the two experiments at Inschfield and Logie Home Farm, no special preparation was made, apart from that ordinarily given to the Turnip crop. The farmyard manure in the former was applied on the surface, and in the latter in the drills. Both crops received artificial manures. The seeds sown were: English (Canadian Stock), Vilmorin, Kuhn, and Dieppe. Comparatively large numbers of the plants—something like ten to twenty per cent—were found to have "bolted," in the earlier sown crop at Inschfield, while only one or two per cent "bolted" in the crop sown at the beginning of June at Logie Home Farm. The yields in unwashed roots were as follow:—

Inschfield.

	Tons.	Cwts.	Per Cent of Sugar.
English (Canadian Stock)	1	18	16·2
Vilmorin	2	14	15·4
Kuhn	1	18	15·6
Dieppe	3	4	17·4

Logie.

	Tons.	Cwts.	Per Cent. of Sugar.
English (Canadian Stock)	6	10	17·4
Vilmorin	8	2	17·0
Kuhn	6	14	14·9
Dieppe	7	5	14·8

It is difficult to account for the small yields at Inschfield except for the fact that the crops made rather a poor braird and were too thinly sown. The sugar factories make a strong point in respect to sowing plenty of seeds. The crops were much more regular and closer in the drill at Logie, but the roots were scarcely up to the best size. The season does not appear to have favoured growth, yet the percentage of sugar is satisfactory in most cases. The cold, backward weather in the early part of summer appeared to delay growth very considerably, and may be accountable for the undue "bolting" which occurred in the earlier sown crop.

It is interesting to note that a loss of about ten per cent is recorded in the crop between the weights at the forwarding station and the amount of washed roots prepared at the factory for manufacturing purposes, due to the adhesion of soil to the Beets. The price realised at the factory was 44s. per ton of Beet with fifteen-and-a-half per cent of sugar, with an addition or reduction of 3d. per ton in respect of each one-tenth per cent of sugar content above or below that standard. The seeds cost 6d. to 8d. per lb., and a thick sowing of from fifteen to twenty pounds per acre is recommended. It was found, too, that the crop may be very much reduced by scrimping the seed. The distance between the drills was greater than that recommended for Sugar-Beet, viz., eighteen to twenty inches, consequently the yields are likely to have been considerably less than would have been the case with narrower drilling.

To grow Sugar-Beet successfully, however, it must be remembered that the crop requires much more careful cultivation than, say, Turnips. The soil has to be ploughed deeper and weeding has to be carefully attended to. *W. K.*

NURSERY NOTES.

MESSRS. ANDREW IRELAND AND HITCHCOCK, OF MARKS TEY.

Everyone who thinks of Mr. Andrew Ireland simultaneously thinks of Sweet Peas, for there is no man who has been more conspicuous as a grower and exhibitor in the modern history of the Queen of Annuals.

With one exceptionally notable diversion, to which attention shall be drawn later, Mr. Ireland will talk of Sweet Peas from about a generation back right to date, and if his modern facts have a greater value, his remembrances and reminiscences are full of fascinating interest to enthusiasts. One of the stalwarts of the Bicentenary Celebrations, he was among those who assisted to launch the National Sweet Pea Society, and he has remained among its staunchest supporters throughout its career. On the occasion of the visit which constitutes the *raison d'etre* of these notes, the topic was rather Sweet Pea seeds than Sweet Pea flowers, though these latter, in the finest of present-day varieties, were not forgotten. As for seeds—well, the plants in the several acres were literally weighted down with them, and if the harvest fulfilled the promise, there were sufficient to satisfy the extensive demands of the firm's customers.

When it comes to a matter of reference to specific varieties, as seen at Marks Tey early last autumn, the first problem is where to make a start and the last is, when to come to a finish. Number one, then, shall be the exquisite Constance Hinton, which, even though it is getting on in years, as measured by the life length of many modern Sweet Peas, still stands with the finest of the whites for garden or exhibition. Then there are the superb cream pinks, Mrs. Arnold Hitchcock and Picture; the splendid blues, Mrs. Tom. Jones and Commander Godsall: the indispensable pinks, Daisybud Improved and Hawlmark Pink Improved; the rich, crimson Charity; the glistening, scarlet-red Royal Scot; the distinct Mascotts Helio and Warrior; the delightful Orchid Improved and Powerscourt; and Ravenswing, darkest of all Sweet Peas, and for that reason, not always welcome.

There are just six others varieties which must be mentioned, because they appeared to be Mr. Ireland's chief concern in 1924, and also because they are of unquestioned excellence. They are Lord Lascelles, pure lavender; Mascotts Purple, which calls for no descriptive words: Shamrock, rosy mauve, noteworthy as having been honoured with the Award of Merit of the Royal Horticultural Society; Madame Sarah Grand, with wings of pure ivory and standard ivory, tinged buff; The Beacon, very deep, yet richly-bright, coral-orange; and Moonbeam, which has blue wings and light blue standard suffused with heliotrope; the fifth and sixth received Awards of Merit at York Gala.

Harking back to the diversion alluded to in the opening line of the second paragraph we have the widely-honoured result of a cross between Scarlet Beauty Sweet William and a single, scarlet Carnation, to which the name of Dianthus Mascotts has been given. It is a wonderfully floriferous plant, and there are spaces in the beds and borders of every garden which the charming salmon-pink blossoms will adorn as no other can do, because this Dianthus is unique. Judging its merits by expert appreciation, it may be noted that it has been accorded the Award of Merit (1922), the Bronze Flora Medal (1923), and the Silver Medal (1924) of the Royal Horticultural Society: the Award of Merit (1924) of York Gala; and, in its special direction most noteworthy of all, the First-Class Certificate of the British Florists' Federation as a market plant. It is dowered so richly by its own natural beauty and by the considered opinions of those qualified to judge in the horticultural world to such a degree that none will question its merits. *T. W.*

SOME USEFUL LATE APPLES.

During the past month several varieties of Apples have been sent to me for naming, including those described below, all of which are of first-class quality. It is surprising to me why many of these older Apples are not more extensively grown as each of them is of great utility and possesses a commercial value. The varieties have been selected out of a dozen sent for naming, and whether for garden or orchard purposes, all will be found commendable.

Rushock Pearmain is an excellent dessert Apple of first-rate quality in use from January until April. The fruit is of medium size, conical, and evenly formed. The skin is deep yellow, covered with russet and with a brownish tinge on the side next the sun. The eye is large and open; the stalk, one-quarter-of-an-inch long, inserted in a deep cavity. The flesh is yellowish, firm, crisp, and juicy, with a brisk, sub-acid, sugary flavour. It was introduced about the year 1821 and raised by Mr. Charles Taylor of Rushock, in Worcestershire. As a late Apple of quality it deserves to be generally grown.

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* *Transactions of the Royal Caledonian Horticultural Society*, Vol. I, p. 79.

Gooseberry Apple is a variety that keeps "until Apples come again," and is a most useful culinary sort. The fruit is above medium size, roundish, with obtuse ribs on the sides, which extend to the crown where they form ridges. The skin is deep green, with a tinge of brownish-red next the sun. The eye is open, the stalk short. The flesh is greenish-white, juicy, with a subdued acidity. It is a splendid cooker and retains its freshness for a whole year. This Apple is well-known in the Kent and Sussex orchards, but it is seldom planted nowadays.

Flanders Pippin is a culinary and dessert Apple of more than ordinary merit, as seen and cultivated in the Herefordshire orchards, where trees are falling into decay; the more's the pity. Flanders Pippin, as known in the above county, is an Apple of above medium size, in flavour similar to a well-grown Cox's Pomona, and has been pronounced quite good for dessert purposes. The skin is pale green, changing to pale yellow as it ripens, with a flush and streak of red on the side next to the sun. In some districts the fruits have as much colour as a well-finished Peasgood's Nonesuch. The flesh is white, juicy, and sugary, retaining its freshness to the end of February. The eye is closed; the stalk is inserted in a deep-ribbed cavity. It is a free cropper and a healthy grower.

Dr. Harvey, which should not be confused with Golden Harvey, Harvey's Reinette, or Harvey's Wiltshire Defiance, is known also by the name of Harvey Apple, and must be of ancient introduction. It is well known in Norfolk and much esteemed as a baking comfit. Lindley describes its value: "When baked in an oven which is not too hot these Apples are most excellent, they become sugary and will keep a week or ten days, furnishing for the dessert a highly flavoured sweetmeat."

The fruit is a large, ovate, and somewhat angular in outline. The skin is pale yellow, dotted with green and white specks, the crown being marked with lines of russet. The eye is small and depressed; the stalk is short and tender, inserted in an uneven cavity. The flesh is firm, white, crisp, very juicy, and perfumed. The season of this variety is the end of February. Where large specimen fruits are appreciated this variety is to be recommended.

Round Winter Nonesuch is a fine Apple, combining large size, even contour, high colour, and fine quality. The tree is a clean grower and an excellent bearer when surrounded by other sorts. The fruit is very large, roundish, somewhat obtuse, and slightly ribbed. The skin is pale yellow, slightly tinged with green on the shaded side and broken with stripes, and spots of deep crimson, strewed with a few russet-dots next the sun. The eye is large and closed, slightly raised from the surface. The stalk is short and inserted in a shallow cavity. The flesh is greenish-white, tender, sweet, and juicy, keeping sound until April, if harvested properly and kept in a cool temperature.

Lady Henniker (Fig. 12) is one of the best Apples for dual purposes. It was raised about the year 1865 at Thornham Hall, near Eye, Suffolk, and brought to public notice by Mr. John Perkins, head gardener, about 1873. It is stated that this variety was raised from a pip taken with others from cider-must. The fruit is large, roundish, with blunt angles on the sides, which terminate in prominent ridges around the eye. The skin is yellow, covered with broken streaks of crimson on the side next to the sun. The eye is large and open, the stalk short and set in a deep, wide, russety cavity. The flesh is yellow, tender in the grain, juicy, sugary, and well flavoured, with a pleasant perfume. This Apple will keep sound until the end of February and succeeds on all systems of training, but especially as a bush, half standard and espalier tree. *Pomona.*

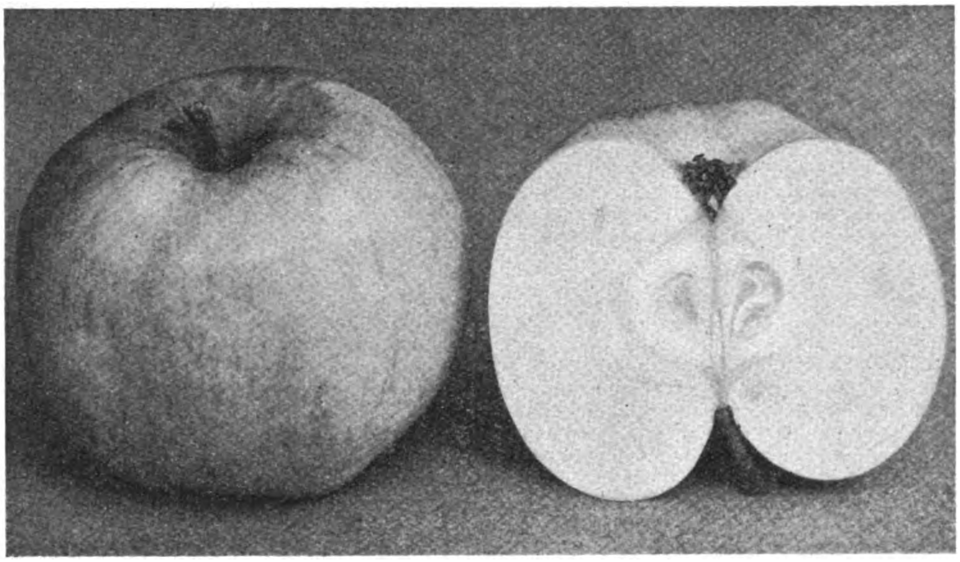

FIG. 12.—APPLE LADY HENNIKER.

VEGETABLE GARDEN.

CAPSICUM OR PEPPER.

CAPSICUM ANNUUM. LINN. AND TOURNEFORT.

While the Capsicum may very properly be classed as a fruit in England, its use as a vegetable in other countries ought not to be overlooked, especially in view of the prominent part it has recently played in some Gold Medal collections of vegetables exhibited in the Royal Horticultural Society's meetings, which have shown to what a high state of perfection it can be grown in this country.

These notes are penned in the hope that a little more knowledge of the history, nature and uses of this interesting plant may lead to its more general cultivation as a table vegetable.

Taking its history first, it appears to have been known in Europe for nearly five centuries. A knowledge of the plant has even been ascribed to Pliny (A.D. 70) with some show of reason. Thus Henry Lite, in his 1578 translation of the *Herbal* of Dodoens, states under the heading 'Brasile or Indien Pepper' "that Actuarius (13th century) named it in Greek, Capsicon, and in Latin, Capsicum. Avicenna (11th century) named it Zingiber canina (a manifest blunder), that Pliny (A.D. 70), after the opinion of some men, named it Siliquastris and Piperitus, and such as do write in these days (1550) name it Piper Indianum, Piper Calecuthium and Piper Hispanium, in English it is Indian and/or Calecute (Calcutta) Pepper." Dodoens himself, in 1550, named it Bresile or Indien Pepper, and stated that Brazil and the West Indies were the countries of its origin. He also gave good illustrations of plants in fruit of four distinct varieties, viz., Long Red, Long Cayenne, Large Bell, and the Bird's Eye, the last the most pungent and smallest fruited variety known.

In the Supplement to the *Herbal*, published in the 1618 edition, illustrations are given of fruits of twelve additional varieties, together with full descriptions and their history, all of which are in existence to-day.

Miller, 1759, following the lead of Linnaeus, uses the now popular name of Capsicum and states "that it is also called Piper Indicum, Americanum, and Brasilianum, and Guinea Pepper," and that "most of the sorts come from Both the Indies, but they have been brought to Europe from America where they abound in all the Carribbee Islands, and are used by the Inhabitants in all their Sauces; but especially by the Negroes, hence they are called Negro Pepper. In Spain and Portugal these fruit are much cultivated, and used for the same purposes, but in England they are cultivated for ornament, being rarely used for sauce or in Medicine." Miller also describes ten distinct species and nine additional varieties with fruit variations, which he had raised himself and which appeared to have become constant. Respecting one of the species "with a fruit having a swelling Belly and Square at the top, commonly called Bell Pepper," he writes, "this is the only sort which is proper for Pickling, the Skin of the Fruit being fleshy and tender . . . . the fruit should be gathered before it is ripe and at its full size, while the rind is tender: slit down the side to take out the seed and then soak it for two or three days in cold water. After being well drained boiling vinegar must be poured over them to cover them, they should then be closely stopped down for two months: they should then be boiled in the vinegar to make them green: they want no addition of any sort of spice, and are *the wholesomest and best pickle* in the world." The *viandefroide* on Monday had no terrors for Phillip Miller's good wife while she had a jar of Bell Pepper pickle in her larder.

Jas. Justice, who was contemporaneous with Linnaeus and Miller, and refers to the latter as "my very ingenious and worthy friend," set himself the task "of revising, in the pages of the *Scot's Gardiners' Director*, the Lists of Flower Seeds annually received from Holland which, I must say, are neither rightly named botanically or otherwise, I having sowed all these seeds for two years." For his purpose he selects the "Catalogue of Fine Flower Seeds, sold by Dirk and Pierre Voorhelm, Florists at Haarlem, 1754. The Hundred sorts for 5 Gulden." The catalogue contained 421 kinds of seeds, including Abutilon, Aster, Carnation, Stock, Scarlet Runner Beans, Pepper, nine varieties, and Pomum Amoris, four varieties, both the last in red and yellow coloured fruits. A free translation of the title page of Dirk and Voorhelm's Catalogue is given, not as a free advertisement for an extinct firm, but to call attention to the price at which the seeds were offered, which at the pre-war rate of exchange, works out at "One Penny per packet." It is evident that the enterprising seedsmen of our own day who sell everything, including Mustard and Cress and Orchids in penny packets, are at least a century behind the wide-awake Dutchman in taking this step.

There are at the present time about sixty different varieties of Capsicums in existence, which are classed under various sections as follow:—mild and edible, about fifty; hot, say twelve, and ornamental, six. While mild varieties may be readily eaten by those who have acquired the taste, the hot and ornamental sorts make excellent pickles, relished by all who love piquant dishes.

The hottest of the hot are: 1, Cayenne, long, narrow, red, which furnishes Cayenne Pepper, and decorates the glass jars of mixed pickles; 2, Tabasco, hottest of all, a very vigorous form of Chili, with fruits of about the same size, an excellent digestive for Blue Point Oysters; 3, Bird's Eye, or Creole (C. baccatum), very small, oval-shaped fruits, with a sharp, pungent flavour. "From this fruit is made the Cayan Butter, or what the Americans call Pepper Pots, the best of all the spices." "One scruple put into chicken or veal broth comforts cold stomachs, dispels phlegm and viscous humours, and helps digestion"; 4, Red Chili, and its derivatives, Red Cluster and Coral Gem Bouquet, are too well known to need description here; 5, Red Cherry, this is accounted by some a distinct species from its lateness in ripening and habit of growth. The fruits of both the red and yellow varieties might easily be mistaken for large Cherries, but the taste is hot enough to "revive a mummy." It was sent from the Spanish West Indies to Miller in 1759. The ornamental varieties are mostly small, and their attractiveness consists in oddity of form and mixture of colour (white, purple striped, yellow, and scarlet fruits on the same plant at the same time); Proteus, Celestial, and its dwarf form Chameleon, are the best of this section.

A new race of ornamental miniature Peppers has recently been introduced, bearing yellow or scarlet fruits of most varied and fantastic shapes, which make excellent pot plants for winter decoration. Prince of Wales is the best yellow form for this purpose, and there are three black varieties to set off the brighter colours. Golden Dawn makes an attractive pot plant.

Of the mild, and consequently edible, Peppers, it will suffice to give a list of a few of the very best, merely premising that to produce them fit for use they require generous treatment, which, as they are mostly used when in a green state, need not be a very lengthy matter.

Glory heads the list a perfectly conical, upright variety, measuring three inches in length and two inches across the stem end. The skin is a rich crimson scarlet in colour, and the sweet, mild flesh is so thick that there is hardly room for the seed. Reinette (Hort. Herb.), "Sweet as an Apple," which it resembles in shape of fruit and of mild, aromatic flavour, may be eaten raw or prepared as a salad. Neapolitan Large Early Red, is the largest, earliest, and most productive of the mild, red Peppers, and the best for northern climates. Chinese Giant, including red and yellow forms, is an early, vigorous-growing variety, producing a heavy crop of mammoth fruits of extra fine quality. The fruits are a rich, dark green colour when young. Sweet Mountain (syn. Improved Bull Nose) is a larger and earlier Bell Pepper, not so leafy and does not produce so much seed; it is a very desirable variety for cultivation in temperate climates. Hercules, including red and yellow forms, is a giant, upright-growing form, with fruits of very mild flavour. Ruby King (syn. Columbus) is the leading American variety; the fruits are of ruby red colour, six inches long and four inches wide at the stem end. Mammoth Golden Queen is shorter and broader than Ruby King; this is the best and largest yellow variety. Spanish Mammoth, including red and yellow forms, is in shape a blunt-ended, elongated cone, seven inches long, large, and of very fine quality, but rather delicate and late.

There are many more good varieties, but those named above are the best for all-round purposes. For the benefit of readers unacquainted with the method of serving and cooking Peppers, the following instructions, mainly taken from Messrs. W. Atlee Burpee and Co.'s little book by Mrs. Anna B. Scott, are appended:—Stewed Green Sweet Peppers: Cut the Peppers in half lengthwise, then in quarters. Remove all seeds and white fibre; soak the Peppers in cold water for half-an-hour; drain and put in a saucepan. Cover with boiling water; add one teaspoonful of salt; boil for thirty minutes; pour into a colander and drain. Set the colander on a plate and put in a warm oven. Put in a warm dish and pour over one tablespoonful of melted butter and dust with Pepper. This is very good with Hamburg steak or meat loaf, especially if Rice is used with the meat. Stuffed Green Peppers: Take six green Peppers, one cup of Rice, two tablespoons of finely cut bacon, one tablespoon of finely cut Onion, one hard-boiled egg, one raw egg, one teaspoon of salt, a quarter teaspoon of Paprika. Boil the Rice as usual. Wash the Peppers, cut off the stem ends, remove all seeds and white fibre, and soak in cold water for thirty minutes. Remove and dry; fill with Rice prepared as follows: Put the bacon in a frypan, add the Onion and fry until light brown; add two cups of boiled Rice, the hard-boiled egg, chopped finely, and heat through. Remove from fire and add the well-beaten raw egg, salt, and Paprika; mix well. Fill into Peppers; dust top with bread-crumbs; place in a deep pan; bake in hot oven thirty minutes; or you can bake in individual ramekins. To prepare corned beef hash with chopped green Peppers, mash a sufficient quantity of cold boiled Potatos and mix with it enough finely chipped, tinned corned beef and two raw eggs well beaten up. Fry in the pan until brown, turn over in style of an omelet. Chip some fresh green Peppers over it and serve hot, and you have a health-giving, pleasant and satisfying dish that leaves no unpleasant results behind. *S. B. Dicks.*

FORCING FRENCH BEANS.

Few vegetables are more highly esteemed during the late winter and early spring than French Beans, and although the produce is small in proportion to the cost for labour, those who have command of forcing houses will find it to their benefit to endeavour to supply the table more or less liberally during the season referred to.

To maintain a regular supply of pods for any length of time, considerable space will be necessary, but as French Beans are less exacting in their requirements than many other subjects that have a place in the forcing house, there will not be much difficulty in providing space for fair-sized batches where forcing is carried on to a moderate extent. No one who has experience in the forcing of vegetables will question the statement that the fullest measure of success will be ensured by growing them in a structure by themselves, but this ideal condition is possible only to the favoured few, and the plants may be grown quite successfully in plant houses with other subjects.

The grower of French Beans under glass must, then, shape his course according to the means at his disposal. If he has the command of light, efficiently-heated pits, the Beans may be grown on a bed of soil, but when grown in houses with other subjects pot culture alone can be adopted with advantage. For planting out in pits it may be said that, although bottom heat is not essential to the production of satisfactory crops, a genial warmth at the roots is of considerable advantage. A good plan is to make up a bed of leaves to within eighteen inches of the glass and then cover the bed with eight inches of soil. On the bed thus formed the Beans may be sown in rows made ten inches to twelve inches apart. When the plants have produced their first pair of leaves they should be thinned, leaving them five inches to six inches apart in the rows. If more convenient, the Beans may be sown rather thickly in shallow pans or boxes, and the seedlings transplanted when of a suitable size; where successional houses are devoted to the crop a considerable saving of time is effected by this method.

For pot culture the Beans may be sown in receptacles in which they are to produce their crop, and for this purpose eight-inch pots are most suitable as they are large enough for the plants and of a convenient size to move about. In sowing the Beans the pots should be about two-thirds filled with a compost consisting of three parts loam and one part old hot-bed manure. Five or six Beans may be placed in each pot and covered with half-an-inch of fine soil. The position of the pots until germination of the Beans is of little consequence, but they should be placed near the roof-glass immediately the young plants appear to prevent the latter becoming drawn. On the Beans attaining a height of about four inches the pots should be filled with a similar compost broken up rather finely. Considerable care is necessary in applying this top-dressing, as the stems of the young plants are very tender and easily bruised. Sowing in this manner is, however, recommended because the plants make a considerable length of stem, whether the pots are filled to the usual level or not, and by sowing two or three inches below it a top-dressing may be applied that will give substantial support to the stems. A few twigs should be placed around the pot so soon as the plants begin to branch.

French Beans require, when in the forcing pit, a comparatively high temperature, an abundant supply of water at the roots, and frequent syringings. A temperature of about 70° is probably the most suitable, and this amount of warmth should be provided during the whole period of growth. Unless the greatest care is exercised and the syringe applied vigorously the foliage will become infested with red spider at an early stage, and, as every cultivator knows, this pest is not easy to combat. After the pots are well filled with roots the plants will usually require watering once daily, and so soon as the plants are in bearing they may be assisted by giving them liquid manure alternately with clear water. In no case should the pods be allowed to remain on the plant after they have attained a suitable size for the table, for not only do they deteriorate in quality but they impose a tax on the plant to the injury of later pods and thus reduce the crop. The best course is to gather the pods each day as they attain a suitable size, and stand them with their stalks in a saucer of water in a cool place. Most growers have their choice of varieties; I have found Osborne's Forcing and Magpie excellent sorts for the purpose. *W. A.*

CAULIFLOWERS.

Seeds of early-maturing varieties of Cauliflower, such as Forerunner or First Crop, should be sown at the end of the present month in boxes of fine soil and placed in a warm frame to germinate.

Cover the seed boxes with a piece of glass and the glass with paper until the seeds have germinated, then remove them to a cool house, in a position near to the roof-glass to promote sturdy growth.

When the plants are large enough to handle, prick them out into other boxes, and grow them on in a cool frame. *R. W. T.*

FRUIT REGISTER.

PEAR DANAS' HOVEY.

A correspondent in our American contemporary, *Horticulture,* pays tribute to this variety of Pear, which, he states, nearest approaches the Seckel for flavour, and is of a high quality generally. It is known on the American market as the Thanksgiving Pear, being at its best at that season. The correspondent states that if he were undertaking the cultivation of Pears as a commercial proposition this would be one of the three or four varieties which he would plant.

The fruit is of small size, but he states that larger specimens may be obtained by a suitable thinning of the crop.

He gives the history of the Seckel Pear as originating in a hedge in Pennsylvania, stating that it has the standard of quality by which all other Pears are judged.

The name of the variety under notice is given as Dana-Hovey, but is known here as Danas' Hovey and in France as Hovey de Danas. Bunyard states in *A Handbook of Fruits* that it was raised at Roxbury, U.S.A., by Mr. Francis Danas, and named after Mr. C. M. Hovey, a well-known American pomologist.

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Onions Excelsior v. Ailsa Craig.—The story related to your contributor, *Pomona* (p. 412, December 13, 1924), is most interesting, so far as it discloses the source of the seed from which the former variety was obtained, but there may be some who, like myself, beg to differ from his version of the origin of the latter, and I am convinced that Mr. S. B. Dicks (p. 350, December 6, 1924), gives the more nearly correct story. The late Mr. David Murray was gardener here for many years, and was an acknowledged expert amongst fruits and vegetables in his day, and I have no doubt that some gardeners who were with him at the time could certify the particular cross or crosses he made to obtain the Ailsa Craig Onion. The "authentic information" on which *Pomona* relies when he states that a supply of this Portuguese seed was sent to Scotland and sown and grown at Ailsa Craig must make all Scottish gardeners smile! *Alfred T. Harrison, Culzean Castle Gardens.*

Mistleto.—*Pomona's* directions for sowing Mistleto page 435, vol. LXXVI), seem needlessly elaborate. No doubt he has found his method successful, but propagation can be effected in a much more simple way. To wash the viscum from the seeds, as *Pomona* recommends, is to divert them of the means of adhesion provided for that special purpose. Slitting the bark, also, is quite unnecessary. If Mistleto ever was indigenous in Scotland, it disappeared entirely with the Caledonian forest; but it grows quite freely when sown by hand. It is quite sufficient to press a ripe berry upon the under side of a vigorous young branchlet, where it will adhere securely by its own glue, which dries up in a day or two, binding the seed safely to the bark. Twelve months later a cylindrical green sprout appears, arches over, pressing its free end into the smooth bark. Then it disappears, and is seen no more for a year or two; but that the parasite is busy establishing itself may be seen by a swelling on the branch. At last a pair of small green leaves are put forth, and growth thereafter is steady and rapid if the host is congenial, which, it appears, is not always the case. About thirty years ago I sowed Mistleto here on Apple and Hawthorn. Those on the Apple trees have grown into huge branches, while on the Hawthorn there is nothing more than twigs six inches long, though the branches have goitre-like swellings around them. Yet on the golf links at Saint-Jean-de-Lux there is a grove of Hawthorn simply devastated by Mistleto. *Herbert Maxwell, Monreith.*

Bees and Apple Fertilisation.—The subject of the value of bees amongst Apples is raised by *W. T.* (p. 424, December 20, 1924) At one time bees were kept on my place chiefly for the sake of their work amongst the fruit bloom. After the Isle of Wight disease made practically a clean sweep of them, it was found that just as good a set of fruit was secured; so no more trouble was taken with bee-keeping. I used sometimes to see the bees very busy on the Apple-bloom for a day or two in the season, but I came to the conclusion that they gave preference to other flowers when available. When the fruit bloom was open, the bees could often be traced streaming right away to distant fields, probably to Clover or Charlock. In my district, I think there are quite enough wild bees to do all the pollinating of Apple bloom that is necessary. The bumble bees seem to be particularly good friends in this respect. As for the profits of bee-keeping, I think it involves the most work for the least return of any rural industry. *Market Grower.*

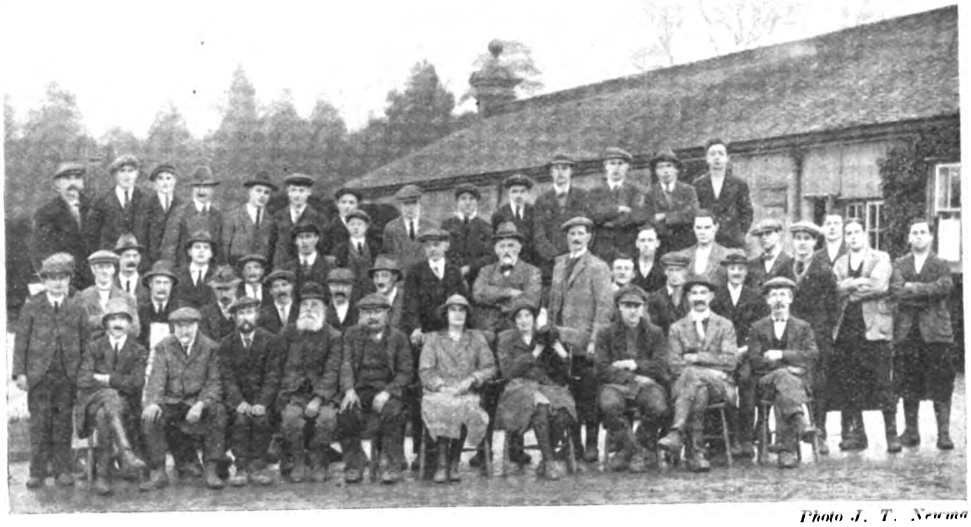

Photo J. T. Newman

FIG. 13.—GARDEN STAFF AT ALDENHAM HOUSE, ELSTREE.

Garden Staff at Aldenham House.—The accompanying illustration (Fig. 13) shows the garden staff at Aldenham House, Elstree. No fewer than nine of the employees shown are well over fifty years of age. The record of long service is held by Mr. J. T. Capell, the kitchen garden foreman, who has completed forty-one years of service at Aldenham. Mr. Edwin Beckett, V.M.H., the gardener, who has now turned three score and ten, has been at Aldenham forty-two years. Thirteen men have periods of service totalling two hundred and sixty-four years. Many of the employees, now of middle age, commenced their gardening career here on leaving school, and several have twenty-five years service to their credit; even the two young ladies on the staff have each been at Aldenham for eight years. *J. T. N.*

Runner Beans.—I was very much interested in the note by Mr. C. Ruse on Runner Beans in your issue of December, 27th, 1924. I had a splendid crop of the same variety, he mentioned, viz., Sutton's Prize-winner, my longest specimen being nineteen-and-a-half inches. *W. Windle, Mystole Gardens, Chartham.*

SOCIETIES.

BUCAREST (ROUMANIA) GARDENERS'.

The second exhibition of the Bucarest Gardeners' Society was held in Park Carol, Bucarest, on November 10, 1924, and it proved a great success. Their Majesties the King and Queen, who opened the show were accorded a great reception.

The successful competitors included Messrs. C. Farado and Sons, who received a Gold Medal for Chrysanthemums, theirs being the largest group in the show. M. Jean Lacroix was awarded a Gold Medal for Palms and a display of conserved Canteloup Melon. A Gold Medal was awarded to M. Theobald Scheidegger for Chrysanthemums and decorative plants.

Prince G. V. Bibesco, Mogosbea (gr. Mr. J. W. Funge), gained a Gold Medal for Carnations and a Silver Medal for Single Chrysanthemums and other flowers. Prince B. Stubey, Buftea (gr. Mr. G. Bernhart), received a Gold Medal for fruit trees and Lilac, and a Silver Medal for a display of greenhouse plants.

The Prime Minister, Mr. J. V. Brattianu, exhibited a collection of vegetables and fruits, which proved very interesting, as it contained specimens of many rare fruits. Many other awards were made to nurserymen from Transilvania, who contributed giant Cyclamen, perpetual-flowering Carnations, etc., all finely grown.

TRADE NOTE.

The choice of suitable fuel for use in greenhouse boilers is a matter of great importance to those who have to study economy in fuel and the efficiency and heating capacity of the boilers. It must be remembered that fuel costing little may be very dear, giving as it does very few heat units and burning fiercely, with a high percentage of ash. There are now a number of coal firms who are devoting their special attention to the selection of good coal for horticultural usage, and judging from the testimonials which The Bucklo Colliery Company, Cheltenham, have received from numerous clients, their semi anthracite coal—a speciality of the firm—appears to be ideal for stoking greenhouse boilers and has given entire satisfaction.

Obituary.

Albert Truffaut, senr.—It was with feelings of profound regret that, just as we were going to press last week, we heard of the death of this distinguished French horticulturist. M. Albert Truffaut, senr., was descended from a horticultural family, and his nursery at Versailles has for many years enjoyed a world-wide reputation. It was founded in 1824 by his grandfather, Charles Truffaut, who was born in 1795. His son, Charles Truffaut, junior, continued the business until the subject of our notice undertook its management in 1868. Thenceforth he extended in a great measure the operations of his establishment to a degree practically unknown by his predecessors. The cultivation of Dracaenas, Bromeliads, Crotons, Aroids, and innumerable kinds of choice stove plants formed an important part of the business and were made the subject of very many handsome exhibits at exhibitions, not only in France but abroad. In course of time M. Albert Truffaut, senior, gave up active participation in his famous nursery and transferred his interest in it to his second son, M. Albert Truffaut, junior, the eldest son George, as many of our readers are aware, having built up a very fine business on his own account, known as Les Etablissements et Laboratoires Georges Truffaut, also at Versailles. It would be difficult to follow through with any degree of detail the interesting career of this eminent French worker in horticulture. At an early age he travelled abroad for the purpose of enlarging his knowledge of his profession and gaining linguistic proficiency. He came to England for a time and stayed at the famous nurseries at Chelsea, then under the direction of the late Sir Harry Veitch's father—as he reminded us in his speech at the banquet given to the foreign visitors by the Royal Horticultural Society in connection with the Royal International Horticultural Exhibition held at Chelsea in 1912. Of this he was a member of the Foreign List of Honour and also of the Jury. Indeed, in this capacity, M. Truffaut acted in all the most important exhibitions on the Continent. He learned English well, and this of course was of material benefit to him during his long and active career, for he was in his eightieth year when the call came for him to depart this life. His connection with French horticulture and particularly with the National Horticultural Society of France, was of enormous value. He joined that Society in 1867, and fulfilled the offices of Secretary, Councillor, and Vice-President. To the last-named position he was appointed to fill the vacancy caused by the death of another famous French nurseryman and colleague, the late M. Henri de Vilmorin. He was for twenty-five years Vice-President and then President of the Commercial Union of Nurserymen and Seedsmen of France. How many other prominent positions he was elected to by his fellow countrymen it would be difficult for us to enumerate. In February, 1914, on his retirement from active work as Vice-President of the great French Horticultural Society, he was entertained to a banquet at the Palais d'Orsay by his colleagues. It was a subscription banquet, many friends in France, Belgium, England, Holland, and Russia sending their contributions towards the festive event. Speeches by all his old friends were made rendering homage to his worth and expressing their appreciation of the work accomplished by him during his long career. We have preserved a choice and most artistic account of that meeting with a very fine coloured photograph of M. Albert Truffaut, senior, executed by his son George. Speeches were made by such eminent men in horticulture as MM. Abel Chatenay, Nanot, Chas. Pynaert, Viger, etc. We have stated that the Versailles nursery has now passed into the hands of the deceased's son Albert. It is pleasant to know that there is every hope of this famous French family of nurserymen being continued for many years, for M. Albert Truffaut, junior, is the happy father of four small sons, of whom it is permissible to think one, at least, will follow on in the line of succession to his ancestors. Our deceased friend, and we have known him personally for nearly thirty years and always found him to be genial and kind hearted to English visitors at French horticultural shows, was the holder of many honours and an officer of the Legion of Honour.

ANSWERS TO CORRESPONDENTS.

Adventitious Leaves: *A. G. L.* In the example you cite the leaves would not be adventitious, as their origin would be perfectly normal and would arise from the stem of the plant. A disease may destroy the foliage but the new leaves formed below the affected parts would be produced from latent buds just in the same way as new growths develop when a plant is cut back or pruned.

Cedrus Libanii: *W. R. B.* We have no records of Cedrus Libanii and Cedrus Deodara being poisonous to cattle, and it is very unlikely that they possess poisonous properties in the same way as the Yew. For many years these trees have been fully exposed to cattle and horses, and had they been harmful the fact would doubtless have been recorded.

Cyaniding a Vinery: *A. T. W.* The quantities of materials required to fumigate a vinery with hydrodocyanic acid gas are one ounce of sodium cyanide, one-and-a-half ounce of sulphuric acid, and five ounces of water for every two hundred cubic feet of space. Full particulars are given in our issue for November 22, 1924, p. 362. For tender plants, such as Begonias, the above quantities should be used for five hundred cubic feet of space, care being taken to perform the operation in the evening previous to having kept the plants on the dry side for a day or two.

Diseased Apple Shoots: *R. R. K.* One or two of the shoots were affected with canker, but this does not appear to be the entire cause of the shoots and spurs dying, for examination did not reveal the presence of either fungus or insect pests. Cut away all dead shoots and burn them. In the spring, two three weeks after the blossom has fallen, spray the trees with summer strength Bordeaux mixture, repeating the operation about a month later.

Dwarf-Growing Evergreen Shrubs: *Weekly Reader.* There are a number of evergreen shrubs which will doubtless prove effective and at the same time help to screen the Lily pond. Of Conifers there are Abies balsamea hudsonica, Picea excelsa dumosa, P. e. pygmaea, P. nigra Doumettii, Pinus Strobus nana, Cryptomeria japonica nana, Taxus baccata nana, Thuya occidentalis globosa, T. dolabrata nana, Juniperus communis compressa, J. virginiana compacta, and Pseudotsuga Douglasii nana. Among dwarf evergreen shrubs, other than Conifers, are Cassandra calyculata nana, Berberis Darwinii nana, B. buxifolia nana, Erica scoparia pumila, Arbutus Unedo nana, Ligustrum japonicum coriaceum, Lonicera nitida, Olearia macrodonta minor, Kalmia angustifolia nana, K. latifolia myrtifolia, Calluna vulgaris minima, and C. v. pygmaea.

Grapes Failing to Ripen: *E. G. A.* The variety Mrs. Pince is a late Grape that takes a long time to ripen its fruits, especially if the bunches are large. The colour of the berries depends a great deal on the care given the vines during growth, and it is essential that the vines enjoy a long growing season. Start the vines a little earlier, and apply a dressing of lime in winter or early spring. Give a good application of wood ashes when top-dressing the border, and from the time the berries commence to swell until colouring takes place two or three light dressings of sulphate of potash will prove beneficial. Continue this treatment a second season and pay careful attention to the pollination of the flowers; thin out the berries early and do not overcrop.

Hellebores Failing to Flower: *Constant Reader.* It is difficult to say why your "Christmas Roses" fail to flower freely, unless it be from the necessity of transplanting them, as they take several years to become re-established. As you have succeeded with them in the past there seems no reason why they should not flower freely again once they become well established, that is if they are making normal, healthy growth. The successful cultivation of Hellebores is very uncertain, as they often do well under conditions that do not seem favourable; on the contrary they may fail in situations where soil and other conditions seem ideal for their successful cultivation. This we have known to occur in gardens separated by only a few miles from districts where they flower well.

Iris tingitana: *R. O. C.* We do not think that Iris tingitana will force satisfactorily for two years in succession, although your experiment is worthy of trial provided you keep the bulbs growing after they have flowered. It will be advisable to remove the pots to a cooler house with a temperature of 45° to 50°, and so soon as the foliage commences to die down withhold supplies of water gradually. Iris tingitana rarely flowers out-of-doors in this country from established bulbs; the foliage growth is often very luxuriant and healthy and the bulbs when lifted are as large as those imported from the south of France. The non-formation of the flowers in the bulbs is generally ascribed to the lack of warmth in the soil during the ripening process of the bulbs, and it would be interesting to see if this condition could be overcome by premature lifting and submitting them to a thorough ripening in a dry room, the temperature of which is kept at about 70° day and night for a period of six to eight weeks.

Wart Disease in Potatos: *S. S.* We think your best course if you are not receiving satisfaction with regard to the control of Wart Disease is to communicate with the horticultural instructor of your county.

Communications Received.—H. F.—J. W. F.—Roumania.—R. O. B.—Sugarloaf.—H. P. K.—J. R. McG.—A. B.

CATALOGUES RECEIVED.

Seeds.

Brown and Wilson, 10, Market Place, Manchester.
Alfred Dawkins, 408, King's Road, Chelsea.
McHattie and Co., Chester.
W. Drummond and Sons, Ltd., Stirling.
Thompson and Morgan, Ipswich.
W. Fell and Co. (Hexham), Ltd., Hexham.
Sale and Son, Ltd., Wokingham.
Little and Ballantyne, Carlisle.
J. C. Wheeler and Son, Ltd., Gloucester.
The Premier Seed Co., Ltd., Brighton.
H. N. Ellison, West Bromwich.
Watkins and Simpson, Ltd., 27, Drury Lane, W.C. 2. (Wholesale).
Alex. Dickson and Sons, Ltd., Hawlmark, Belfast.
Cooper, Taber and Co., Ltd., 90 Southwark Street, S.E. 1. (Wholesale).
W. Cutbush and Son, Ltd., Barnet, Herts.
Fidler and Sons, Reading.
Fisher, Son and Sibray, Ltd., Handsworth, Sheffield.
Upstones, 35, Church Street, Rotherham.

The Barton Nurseries, 75, Spilsby Road, Boston, Lincolnshire.—Roses.

Foreign.

M. Herb, via Trivio 24-36, Naples.—Seeds (Wholesale).
Stanislaw Przedpelski, W. Plocku, Ul. Tumska No. 6, Poland.—Tree and shrub seeds.

MARKETS.

COVENT GARDEN, Tuesday, January 6, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-18 0
elegans	10 0-12 0
Aralia Sieboldii ...	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	48 0-72 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Begonia Gloire de Lorraine—	
—32's	54 0-60 0
—48's	42 0-48 0
—60's	21 0-24 0
Cacti, per tray, —12's, 15's ...	5 0- 7 0
Crotons, per doz.	30 0-45 0
Cyclamen—	
—32's	72 0-84 0
—48's	42 0-48 0

	s. d. s. d.
Cyrtomium ...	10 0-15 0
Erica melanthera, 48's, per doz. ...	21 0-30 0
— —60's, per doz.	8 0-10 0
Hyacinths, in boxes—	
—white and pink, per doz. spikes	4 0- 6 0
—blue	5 0- 6 0
Marguerites, white, 48's, per doz. ...	— —
Nephrolepis, in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia ...	30 0-48 0
—60's	15 0-18 0
Poinsettias, doz.	18 0-30 0
Pteris, in variety	10 0-15 0
—large 60's ...	5 0- 6 0
—small	4 0- 5 0
—72's, per tray of 15's	2 6- 3 6
Solanums, 48's per doz	12 0-30 0

Cut Flowers, etc.. Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	15 0-18 0
—cuneatum, per doz. bun. ...	12 0-15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0- 3 0
med. sprays ...	1 6- 2 6
short ,, ...	0 9- 1 3
—Sprengeri, per bun.	
long sprays ...	1 6- 2 0
medium ,, ...	1 0- 1 6
short ,, ...	0 4- 1 0
Bouvardia, white, per doz. bun ...	12 0-15 0
Camellias, White, per box ...	3 0- 4 0
Carnations, per doz. blooms ...	3 0- 5 0
Croton leaves, var., doz. leaves	0 9- 2 6
Daffodils, per bunch—	
—Double Daffodils	1 6- 2 0
—Golden Spur ...	2 0- 2 6
—Soliel d'Or ...	0 10- 1 0
Fern, French, per doz. bun. ...	0 9- 1 3
Galax, American, green and bronze, per doz. bun. ...	— 3 0
French Flowers—	
Carnations, per bun	1 6- 2 0
Marigolds, per pad	7 0-10 0
Mimosa, per pad	8 0-10 0
—per bun. ...	1 3- 1 6
Narcissus, Paper White per pad	20 0-26 0
—doz. bun. ...	6 0- 7 0
Rananculus, double scarlet, doz bun.	18 0-24 0
—Carmine, per doz. bun ...	8 0-12 0

	s. d. s. d.
Roses, Safrano per bun. of two doz. blooms	3 0- 3 6
—per pad... ...	8 0-10 0
—Ulrich Brunner, per doz. blooms	6 0-10 0
Violets, Parma, per bun. ...	9 0-10 0
—single, per pad	12 0-14 0
Lilac, Dutch, per spikes	3 0- 7 0
Lilium lancifolium album, per doz. blooms	4 0- 5 0
—rubrum, long, per doz. blooms ...	4 0- 5 0
—short ,, ,, ...	1 6- 2 6
Lilium longiflorum long, per doz. ...	12 0-14 0
short ,, ,, ...	12 0-14 0
Lily of the Valley, per doz. bun. ...	30 0-36 0
Orchids, per doz.	
—Cattleyas ...	24 0-30 0
—Cypripediums ...	5 0- 7 0
Prunus triloba (Dutch), per bun.	1 0- 1 6
Richardias (Arums) per doz. ...	9 0-11 0
Roses, new crop, per doz. blooms, Richmond ...	4 0-18 0
Ruscus, French, per bun. ...	1 0- 2 0
Smilax, per doz. trails	2 0- 3 0
Tulips, per bunch—	
—Couronne d'Or	2 0- 4 0
—La Reine ...	2 0- 2 6
—Mon Tresor ...	2 0- 3 0
—Prince of Austria	2 0- 2 6
—Rosina	2 0- 2 6
—Thomas Moore	2 0- 3 0
—Wm. Copland...	3 0- 5 0
Violets, per doz. bun	2 0- 8 0

Remarks.—There is a very short supply of cut flowers on the market beyond French consignments, of which Mimosa and Violets are the leading lines. With practically no Chrysanthemums, and these of very inferior quality, forced Tulips are in good demand, and there is now a far better choice of colours than there was a week ago. Golden Spur Daffodils are also increasing in quantity, but it will be fully another week before heavy supplies are received, as the season appears to be later than usual. Dutch Lilac is good and prices are easier.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	— —
—Best	3 6- 5 0
—Others	1 6- 3 0
—Madeira, per box	3 0- 5 0
Beets, per cwt. ...	4 6- 5 0
Cabbage, per tally	6 0-10 0
Canary Island Tomatos ...	6 0-20 0
Cauliflowers, per doz.	3 0- 4 0

	s. d. s. d.
Celery, best, washed, per bundle ...	— 2 6
—Second	0 8- 0 9
Chicory, per lb. ...	0 3½ 4-0
Carrots, per cwt.	3 6- 5 0
Cucumbers, each	2 6- 4 6
Dutch Onions ...	8 6- 9 6
Endive, per doz.	4 0- 5 0
English Asparagus—	
—Finest	8 0-10 0
—Best	5 0- 6 0
Batavia	3 0- 4 0

	s. d. s. d.
French Asparagus—	
Paris Green ...	10 0-11 0
Lauris	12 0-15 0
Greens, per bag...	1 0- 2 0
Leeks, per doz. bundles	2 6- 3 6
Lettuce, per dozen	1 6- 2 6
Onions, Valencia, per case ...	10 0-10 6
Parsnips, per cwt.	3 6- 4 0
Potatos, Canary Island, per case	15 0-16 0
Potatos, per ton—	
—Dunbars ...	230 0-240 0
—King Edward	210 0-240 0
—Whites ...	90 0-200 0
—New Guernsey	1 6- 2 0

	s. d. s. d.
Rhubarb, Forced, per doz.... ...	1 6- 2 0
—Canary Islands	10 0-20 0
Turnips, per cwt.	4 0- 5 6
Savoys, per tally	7 6-12 6
Seakale, per punnet	2 6- 3 0
Spinach, per bushel	3 6- 4 0
Sprouts, per bushel	2 6- 3 6
Horseradish, per bundle	2 0- 2 6
Mushrooms, cups	1 9- 2 6
—boilers	1 0- 1 6
Sweet Potatos ...	2 6- 3 0

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Oregon Newtown	13 0-16 0
—Newton Wonder	6 0-10 0
—Bramley's Seedling	8 0-12 0
—Californian Newtown ...	11 0-12 6
—Munt, per doz.	6 0-12 0
—Delicious ...	11 0-13 0
—Winesap ...	10 0-11 0
—Mackintosh Red	11 0-12 6
—Nova Scotia—	
—Stark	16 0-24 0
—Ben Davis ...	20 0-22 0
—Russett... ...	25 0-30 0
—Baldwin ...	22 0-26 0
—Greening ...	24 0-35 0
Bananas, singles	17 0-25 0
—doubles... ...	17 0-27 6
Californian Pears—	
—Doyenné du Comice, ½ case	— 20 0
—Winter Nelis, per case... ...	30 0-32 6
—Beurré d' Anjou	— 30 0

	s. d. s. d.
Grapes—	
—Gros Colmar ...	1 9- 4 0
—Belgian Royal, per lb.	2 0- 2 6
—Canon Hall ...	8 0- 15 0
—Muscats	8 6- 15 0
—Almeria, per barrel	20 0-26 0
Grape Fruit, Cuban	16 0-20 0
—Bahamas ...	— 16 0
—Florida	16 0-25 0
Jamaica Oranges...	9 0-14 0
Jaffa Oranges ...	15 0-16 0
Kent Cobs, per lb.	1 0- 1 2
Lemons, Messina, per box	8 0 10 0
—Murcia	12 0-13 0
Oranges, Spanish—	
—300's	15 0-30 0
—360's	14 0-18 0
—504's	14 0-20 0
Pears, Belgian, per doz.	10 0-15 0
Pines	3 0- 5 0
South African Peaches... ...	8 0-12 0
—Apricots ...	4 0- 5 0
—Plums	5 0- 8 0
Tunis Dates, per doz.	3 6- 5 0

Remarks.—Trade conditions have been quiet during the past week, which is not unusual at this season of the year. South African fruits, consisting mainly of Peaches, Plums, and Apricots, have sold fairly well. Apples from the United States and Canada are not moving with much freedom and are inclined to be easier in price. Hothouse Grapes are quoted a shade firmer in value. Pears from California, such as Doyenné du Comice, Winter Nelis, and Beurré d'Anjou, are selling fairly well. Grape Fruit is fairly plentiful and quoted at a moderate figure. Oranges are plentiful and comparatively reasonable in price. Hothouse vegetables, including Beans, Asparagus and new Potatos, are scarce, and at the moment somewhat costly. Mushrooms are in ample supply for the present demand and are cheaper. Cucumbers are very high in price, supplies being short. Tomatos from the Canary Islands are in variable condition, and quantities are such that values are at a low level. Green vegetables are not so abundant, and have hardened in price. Salads are shorter and quoted higher. The Potato trade is steady with supplies equal to the demand.

GLASGOW.

The era of short supplies and high prices continued to the end of the year, and the little trading in cut-flowers that took place after the holiday on January 1 witnessed a sharp decline in values. When the scarcity was most acute Carnations advanced to 16/4 per doz., and within a week values reacted to 4/-. Other blooms are similarly affected, although in a less degree. Heston White and Winter Cheer Chrysanthemums, which made 3/9 to 4/- for 6's, dropped to 1/6 and 1/8, while William Copland Tulip, after yielding 6/- for 6's, were offered at 3/- and 4/-. When there is such a wide fluctuation, average prices cannot be taken as an indication of values, but the following quotations which ruled at the close are a fair index of the New Year market conditions. The Chrysanthemum season is about over, but Heston White ranged from 1/- to 1/6 for 6's; Winter Cheer, 1/2 to 1/8; Wilcox, specials, 2/- to 2/6; medium, 9d. to 1/-. Narcissus brought from 6/- to 8/- per doz.; Arum Lilies, 5/- to 7/6; Smilax, 2/6 to 3/- for long bunches, and 1/- to 1/6 for short; Mimosa, 7/- to 9/- per pad; and English Violets, 2/- to 3/- per doz. Tulips averaged 1/3 to 1/7 for Thomas Moore and 3/- to 4/- for William Copland for 6's; while special white Hyacinths brought 1/- to 1/2, and pink and blue, 1/- to 1/4. Pans of Tulips and Hyacinths are now in less demand at 1/6 to 2/3 each.

The fruit section of the market is quiet, and, so far as Apples are concerned, prices remain steady and unchanged. Oranges are dearer, however, and Sunkist brand made 28/- to 30/- per case; Mandarins, 1/6 to 2/6 per tray; 9/- to 14/- (420's). Smyrna Figs, averaged 8/6 for ten lbs. While Grape Fruits from Jamaica and Bahamas sold at 18/- to 22/- and 16/6 to 21/- per case respectively.

THE WEATHER IN DECEMBER.

A wet and abnormally mild month, with singular absence of frost, summarises the weather for December 1924. The mean temperature of 43.5° is about 6° above the normal, the mean maximum being 48° and the mean minimum 39°. The highest temperature of 54° was reached on the 18th, with 53° on the 17th and 23rd. The lowest screen temperature of 32° occurred on the 15th, and the lowest ground temperature of 26° on the same date. There were in all six days of ground frost, while the soil temperature at one foot below the surface fell from 43° at the beginning to 40° at the end of the month. Rainfall was considerably in excess of normal, the total being 3.91 inches. There were 16 official rain days and 7 days of precipitation (i.e., less than .04 inch), leaving only 8 absolutely dry days. The greatest amount fell on the 25th and 26th; viz., .64 and .65 of an inch respectively. There were .33 hours of bright sunshine during the month, being a little over an hour of daily average. The brightest day was the 8th, with five hours to its credit; nine days were absolutely sunless, and several others with less than half-an-hour. Although the average barometric pressure for the month was normal, depressions occurred at the beginning and end of the month. The highest reading of 30.272 inches took place on the 21st, and the lowest, 28.469, on the 27th. Gales were experienced on the 18th, 22nd, 25th, and 29th. These were chiefly in the evening and late at night, but not so severe as in some other parts. Snow—the first of the season—was recorded on the 30th and 31st. *John Davidson, Meteorological Station. St. Andrew's Provincial Committee, Training College Gardens, Mayfield, Dundee.*

GARDENING APPOINTMENTS.

Mr. Ted Gooden, as Gardener and Forester to Charles Yates, Esq., Haily Hall, Hertford. (Thanks for 1s. for R.G.O.F. Box.—Eds.)

Mr. William Hopton, for two years and nine months Gardener to Major Longeuvell, Belgate, Shobdon, as Gardener to the Hon. C. Hanbury, Shobdon Court, Herefordshire.

Mr. A. Rawson, for the past fourteen years Gardener to the late C. S. Haggie, Esq., Western Lodge, Durham, as Gardener to Mrs. T. Jones, Copsewood, Eaglescliffe, Co. Durham.

Mr. B. Turner, for the past five years foreman at Acton Place Gardens, Sudbury, Suffolk, as Gardener to R. Adams Elliss, Esq., "Greenwoods," Stock, Essex.

Mr. Stanley R. Gammon, for the past two-and-a-half years Gardener to Capt. Walter Stewart Savile, Ven, Milborne Port, Somerset, as Gardener to W. H. Bishop, Esq., Farley Court, Farley Hill, Reading.

Mr. Herbert S. Bray, for the past eighteen years Gardener to the Rt. Hon. Lord Hawke, at Wighill Park, Tadcaster, as Gardener to the same gentleman at Hutton's Ambo Hall, York.

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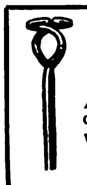

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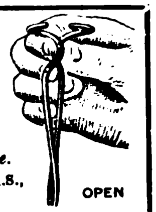

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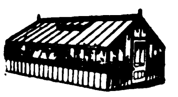

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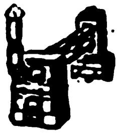

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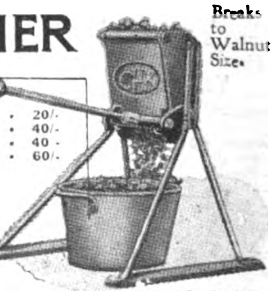

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THE
Gardeners' Chronicle
No. 1986—*SATURDAY, JANUARY* 17, 1925.

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ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, January 14, 10 a.m.: Bar. 30·1 temp. 40°. Weather, Raining.

Apple Packing in Nova Scotia.

Mr. H. V. TAYLOR, Deputy Controller of Horticulture in the Ministry of Agriculture, who has been making a tour of inspection in the fruit-growing districts of Canada and the United States, has written an interesting account[*] of his observations of the Apple packing stations of Nova Scotia. The Nova Scotian Apple orchards enjoy the advantage of compactness. They are concentrated in a narrow valley some seven miles in width, lying between the North and South Don Hills in a series of well-watered valleys to which one, that of Annapolis, gives the popular name for all. It is probable that the seventeenth and eighteenth century French settlers introduced Apple-growing, and it is certain that Englishmen and Scotchmen helped to foster it. Suitable soil and climate and good cultural methods have developed Apple growing into the staple industry of the district. It is interesting to observe that the method of planting does not err on the side of that common fault, closeness of planting. The great majority of the orchards consist of half-standard trees at forty feet apart. The orchards, many of which consist of trees ranging from twenty to one hundred years old, are not in grass, but, except where there is backwood ownership, are cultivated by disc harrows until the end of June, when they are sown with Clover, Vetches, Rape, or other crop to shade the ground and for ploughing in later. Fertilizers—containing nitrogen, acid phosphates and a little potash—are commonly employed, and as a result the trees, so it is claimed, produce a good crop each year. Spraying is practised as part of the routine of cultivation. Most growers spray four times a year and some more. The first spray to be used each year is lime sulphur, three gallons commercial strength to one hundred gallons of water with two gallons of arsenate of lime. In the second and third spraying, the same materials, but at weaker strength, are employed, and in the fourth, Bordeaux mixture (7 : 7 : 100) with five pounds of lead arsenate paste to each one hundred gallons. The large crops of clean fruit would seem to justify the practice. The packing of the fruit is done in accordance with the regulations of the Canadian Government, and under the supervision of Government inspectors who certify the results and have the right to stamp any barrels, the packing of which does not fulfil the requirements of the regulations. The development of systematic packing has led to co-operation among growers, and in many cases growers themselves continue to do the packing, though in other cases they entrust it to packing houses. Records of prices realised demonstrate that the grading which is adopted leads to the securing of markedly higher prices for the top grade (No. 1). The varieties chiefly grown are Baldwin, Blenheim Pippin, Gravenstein, Golden Russet, King of the Pippins, and Ribston Pippin. In 1923 Baldwin No. 1 realised $3.34 per barrel of three bushels, as against $2.48 from No. 2 grade, $2.47 from domestic, and $1.21 from No. 3. One company alone, the United Fruit Company, consisting of a combination of some forty companies, disposed, in 1923, of 481,142 barrels, which is about one-third of the total Nova Scotian crop. Subsidiary industries, vinegar and cider-making, canning and drying, have been developed to deal with windfalls, and to such effect that the by-products in one year (1923) amounted to 25,000 gallons of vinegar, 91,000 gallons of cider, 125,352 gallon cans of Apples, and 361,675 lbs. of evaporated Apples. It is noteworthy also that the Dominion Fruit Act makes packing and grading compulsory.

The R.H.S. Trials at Wisley for 1925.—The Royal Horticultural Society will carry out at Wisley during 1925 trials of Potatos (second-early varieties only, but including varieties suitable for salads); Turnips and Garden Swedes; and Peas (early varieties only). Varieties for trial should reach the Director, R.H.S. Gardens, Wisley, Ripley, Surrey, on or before January 31, 1925. The necessary entry forms may be obtained on application to the Director.

Scottish Sweet Pea Trials.—The committee of the Scottish National Sweet Pea, Rose, and Carnation Society has resolved to inaugurate trials of new varieties of Sweet Peas during the coming season. The plants are to be grown on the cordon system in well prepared trenches in the garden of the secretary at Helensburgh, and a vase of each variety will be staged at the society's show at Glasgow on August 6, when medals and certificates of merit may be awarded. Eighteen plants of each variety must be sent during the first week of March, when they will be potted and kept in cold frames until planting time early in April. They will be grown and exhibited under number and inspected in July by competent judges who have no personal interest in any of the Sweet Peas on trial. It has been arranged that the trials will be under the supervision of Mr. Smellie, who has had a long and successful record as an exhibitor, but is retiring from the competitive field. The trials are to be conducted free of charge, the only obligation on the part of raisers being that they become members of the society.

Loans for the Purchase of Lime.—The fact that many farmers are neglecting the practice of liming, owing principally to the cost, has led the Ministry of Agriculture and Fisheries to draw attention to a system which enables lime to be purchased co-operatively, the Government, under the Agricultural Credits Act, 1923, being empowered to make loans to associations of farmers for this purpose. It is necessary in the first place for a number of farmers to agree to combine together to form a Co-operative Credit Society to be registered under the Industrial and Provident Societies Acts. Before actually proceeding to form the society the committee should obtain an estimate from its members of their individual requirements of lime and make an estimate of the gross cost (including delivery) of the lime to be purchased and of any other necessary handling and clerical expenses. It could then inform the members of the number of shares in the society which each would need to hold in order to qualify for the loan required to cover the expense of purchase, etc., and with their agreement could proceed to register the Society. The total sum advanced by the Government to any society is limited to an amount equal to one pound for every pound share held by members of the Society and on which a sum of five shillings has been paid. Full particulars of the scheme are given in Leaflet No. 99, which may be obtained from the Ministry of Agriculture and Fisheries, 10, Whitehall Place, London, S.W.1.

The Best Cannas.—Mr. C. W. F. Erdman, in an article on the newer Cannas, in *Horticulture*, U.S.A., states that the finest yellow variety is King Midas, and Golden Eagle the second best. Of pink sorts he considers the variety Mrs. Dupont the finest, although Mrs. A. F. Conrad is very distinct in its particular shade of pink. He gives Distinction as the best orange variety, and Mrs. Woodrow Wilson, Olympic, M.M. Wallace, and rosea gigantea as the finest in their colours. The newer variety Florida he considers a fine addition with its light bronze foliage and heavy flower trusses of a lovely red, shading to Orange. Of the dwarf kinds he places Susquehanna, which has light bronze foliage and salmon-pink flowers, first. He has also a good word for the variety The President, which, he states, embodies all the good points in one plant, "a red bloom carried just the right distance above massive green foliage." Fire Bird he places second to The President. In recent years the cultivation of Cannas has declined very largely in this country, which is to be regretted, for it is one of the noblest plants for bedding purposes and makes a fine greenhouse subject.

Cochineal.—Not all gardeners are aware that the valuable dye known as cochineal is derived from an insect pest of a plant, allied to the green fly or garden aphis. In an interesting paper contributed by Dr. R. Stewart MacDougall at the meeting of the Pharmaceutical Society at York Place, Edinburgh, on December 17 last, much information is given regarding the insect, Dactylopius coccus (syn. Coccus cacti), and the method by which the cochineal is obtained from it. Its native country is North and South and Central America, and its host plant is the Prickly Pear. Before the discovery of aniline dyes, cochineal was in great demand and realised high prices, so that the Prickly Pear was introduced into Queensland, South Africa, southern Australia and other warm countries for the special purpose of fostering the cochineal industry. At one time it was a source of great prosperity to the Canary Islands and Dr. MacDougall stated that the value of cochineal formerly exported from the Canary Islands in a single year was £7,000,000, representing a value of £3 5s. for every inhabitant of the Islands. Land was purchased by the islanders for the cultivation of the Prickly Pear, but with the discovery of aniline dyes, cultivators in the Canary Islands suffered very heavy losses. It is interesting to know that this, in a great measure, was responsible for the Banana industry in the Canaries and also for the cultivation of Tomatos on a large scale, for with the decline of cochineal cultivation the islanders took up the cultivation of other crops, their first attempt being the growing of Sugar Cane, which in its turn was rendered unprofitable through the increasing competition in the West Indies. The insects are distributed by placing a cloth over an infested plant and conveying the cloth to a new Prickly Pear and attaching it by means of the spines of the plant itself. The insects quickly settle on the new host and constitute a new cultivation. The method of harvesting the insects is interesting: a portion of the Prickly Pear plant infested with cochineal insects is sliced off and handed to a woman who, with a brush, removes the insects on a cloth prepared to receive them. Dr. MacDougall stated that on a journey from Santa Cruz to Orotava he found the Prickly Pear plants looking as if they had been whitewashed, and on stopping and examining them he found that this appearance was due to an accumulation of hundreds of the cochineal insects, the white wavy exudations giving the appearance of whitewash. Cochineal is still used as a dye, and for some purposes is better, faster and more resistant to weather than the best aniline dyes.

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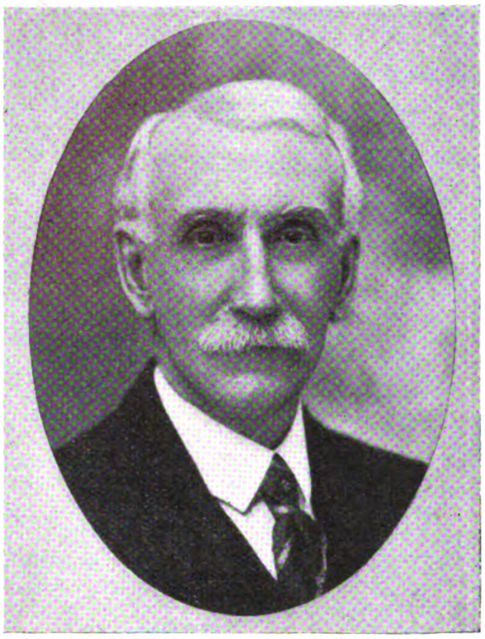
[*] *Journal of the Ministry of Agriculture*, December, 1924, vol. 31. No 9.

MM. Eugene and Emile Draps.—M. Eugene Draps, the well-known Belgian horticulturist, of Laeken, has just received the cross of the Chevalier de l'Ordre de la Couronne, a well-merited honour on which all English horticulturists will be glad to congratulate him. His son, M. Emile Draps, of Merxem, Antwerp, has been elected President of the Antwerp Royal Horticultural and Agricultural Society.

New Professor of Botany at Glasgow.—It is gratifying to learn that the King, on the recommendation of the Secretary for Scotland, has appointed Mr. James Montagu Frank Drummond, Director of Research in Plant Breeding, to be Regius Professor of Botany in the University of Glasgow. A few months ago it was officially announced that Prof. H. H. Dixon, F.R.S., would fill this high position, but he subsequently intimated his inability to accept office. Mr. Drummond first studied botany privately at Kew and later went to Cambridge, where he had a very successful career. In 1906 he became Lecturer in Botany at the Armstrong College, Newcastle-on-Tyne, and filled a similar post at Glasgow University in 1909. After serving in the army during the war he was appointed, in September, 1921, Director of the Plant Research Station of the Scottish Society for Research in Plant Breeding from which post he now returns to Glasgow as successor to Prof. F. O. Bower.

National Rose Society.—At the Annual General Meeting of the National Rose Society, held at Caxton House, Westminster, on Tuesday last, there was a capital attendance of officers and members. Mr. C. C. Williamson was elected President, and the gold Dean Hole Memorial Medal was presented to Mr. Sydney F. Jackson, the retiring President, who has held office for two years. By an almost unanimous vote the members agreed that the Council should apply for the incorporation of the Society by Royal Charter. We hope to publish an account of the interesting proceedings in our next issue.

Mr. William Cradwick.—Over thirty-six years ago Mr. W. Cradwick made Jamaica his home, and in spite of repeated offers of advancement—offers which many a man with much smaller qualifications would have most gladly accepted—he has steadfastly refused to leave the land of his adoption, having unfaltering faith in the possibilities of the colony, and a hope of living to see them realised. This is not the place for even a *résumé* of the many vicissitudes and disasters the island of Jamaica has experienced; we are concerned with the man who has done so much to alleviate the distress they have caused and to successfully anticipate other trials and troubles on behalf of cultivators. After his course of studies at the Royal Botanic Gardens, Kew, Mr. William Cradwick was especially recommended by Sir Daniel Morris to take charge of the Castleton Gardens, Jamaica. The following year, in August, 1889, he was transferred to the Government Cinchona Plantation, where his good work resulted in a further promotion to the Hope Gardens a little over two years later. At about this time the Jamaican Cocoa was held in very bad repute, so much so that "it was designated the worst in the world." At the express desire of His Excellency Sir A. H. Blake, Mr. Cradwick studied the Cocoa conditions and initiated the present system of agricultural instruction of which he still is the head. The improved methods of cultivation and preparation which Mr. Cradwick recommended had almost immediate effect and Jamaican Cocoa began to be esteemed. One of his early pupils, Miss Godfrey of Cascade, Hanover, although a settler in only a small way, profited so greatly that she won the Gold Medal for Jamaican Cocoa at the Crystal Palace exhibition in 1907. The successful outcome of his work in this and other directions, including the training of young men at the Hope Gardens, led the Secretary of State for the Colonies to offer Mr. Cradwick the post of Chief Superintendent of Agriculture of the whole of the British West Indies. In 1912, the Bananas in Jamaica were threatened by a disease hitherto unknown there; this Mr. Cradwick discovered to be the Panama disease, and the measures he recommended "saved the island's premier industry from the greatest menace of its existence." The Prize Holding Scheme of the Jamaica Agricultural Society was originated by Mr. Cradwick, and this proved so successful that it has been adopted with equal success in other parts of the Empire. The land settlement scheme in the Island of St. Vincent is due to his recommendations, and for this he received the thanks of Mr. Joseph Chamberlain, the then Secretary of State for the Colonies, with an honorarium. Ever mindful of the welfare and needs of Jamaica, Mr. Cradwick seems to have spent goodly parts of his holidays abroad seeking trees and plants to take back with him. In this way Solanum Wendlandianum, Adenium Obesum and Thunbergia grandiflora alba, to mention only a few, have become so widely planted as to be important features amongst the other beautiful flowers in the island. In addition to what may be termed his "work" in Jamaica, Mr. Cradwick seems to be the stock Exhibition Commissioner of Jamaica, for he represented the Government in that capacity at the Canadian National Exhibitions of 1913, 1914, and 1922, and was Commissioner for Jamaica at last year's great Empire Exhibition at Wembley, where he gathered together an enormous variety of most interesting examples of the island's flora, arts, crafts, and science.



MR. WILLIAM CRADWICK.

"Botanical Magazine."—Eleven plants are illustrated and described in Vol. CL., part 1, of *The Botanical Magazine.* The first illustration, t. 9024, is a very handsome double page picture of Fraxinus Paxiana, a native of China and north India. The material for the plate was supplied by the Marquis of Headfort from a tree which he bought from Messrs. James Veitch and Sons in 1913, and he states that he would consider it one of the finest of the flowering Ashes, but that it needs shelter from strong winds owing to the brittle nature of the wood. There is some doubt as to this tree being perfectly hardy in all parts of this country, although, so far, it has withstood the winters at Kew. Hoffmannia Roezlii, t. 9025, is a very ornamental foliage plant from Tropical America. It was discovered by Benedict Roezl, as stated in his account of his journeys in *Gard. Chron.*, October 24, 1885, p. 521, where he refers to it under its synonym Campylobotrys Roezlii. The plant is grown at Kew in the stove house and is a perennial herb from five to seven cm. high, with leaves crowded in a rosette; Primula Bulleyana, t. 9026, is in general cultivation in this country and needs no description. It is interesting to learn from the text that accompanies the excellent illustration of this Primula that the plant seeds and crosses very freely in the natural state, and to this is attributed the difficulty of identifying some of Forrest's and Schneider's field specimens with P. Bulleyana. Buddleia Farreri, t. 9027, was described by its namesake in very glowing words in his book *On the Eaves of the World.* A specimen growing in the Temperate House at Kew has flowered and the blooms are said to emit a delicious perfume. This Buddleia would probably require a very warm situation in this country, and be best planted as a wall shrub. The plant, when young, is covered with a soft, white felt, but this disappears with age; the inflorescence is a stiff panicle of tiny rosy-lilac tubular flowers. Of Stellera Chamaeiasme, t. 9028, surprise is expressed by Dr. Stapf that it is not more generally seen in gardens. It forms a glabrous shrublet up to fourteen to fifteen c.m. high; the leaves are bluish-green, almost sessile, and linear-lanceolate in shape. In the upper part of the stem they are crowded into an involucre from which the globular flower head arises. The numerous blooms are a pinky colour, especially in the bud stage. It looks a promising garden plant. Lindmania penduliflora, t. 9029, is a Bromeliad, but is not of so ornamental a character as many of those commonly cultivated. Kleinia stapeliiformis, t. 9030, is a plant of most unusual appearance, like most of its congeners, with a succulent, angular stem with spines along the ridges. The reddish flowers are said to be very attractive, showing to advantage in their native habitat under groups of Acacia bushes; Rhododendron bracteatum, t. 9031, is one of the dwarfer Chinese species, with flowers in umbel-like clusters of three to six; Kunzea ambigua, t. 9032, is a Myrtaceous shrub from New South Wales and not suited to outdoor cultivation, except in the most favoured parts of this country. It grows well at Tresco Abbey, when the material for the illustration was obtained. The bush has a Myrtle-like appearance, but the leaves are very much narrower than in the Myrtle. The flowers have the usual numerous stamens, these being the most conspicuous part of the bloom; Bulbophyllum morphologorum, t. 9033, is the same as Rolfe's B. Dixonii; the *Kew Bulletin*, in which Rolfe's description appeared was not published until November, seven months after Prof. Kranzlin had given it the more cumbersome title. The name morphologorum was given by Kranzlin because of the particular interest the plant had to morphologists, all of which is fully described by Dr. Stapf. The plant has been grown and flowered at Kew and also at Glasnevin and would probably be regarded as a botanical Orchid rather than one for general cultivation.

The Anglo-Belgian Ferry Service.—The service of ferry boats between Harwich and Zeebrugge, Belgium, is now in full operation, and is found to be an ideal method of transporting such perishable commodities as flowers and fruits. There is, of course, no disturbance whatever of the packages from the time they are entrained at the Belgium town of export until they reach London, for the trains actually run on to lines on the ferries, and run off the ferries on to the lines in this country, thus reaching their destination without further handling. It is surprising that a similar service has not been found useful to French growers, for the actual ferry boats which are now being used on the Zeebrugge line were constantly crossing from Richborough to Calais during the war with material of all kinds, and were found invaluable for the purpose. French flowers constitute a large trade at this season of the year.

Appointments for the Ensuing Week.—Tuesday, January 20: Winchester Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting. Thursday, January 22: Royal Botanic Society's meeting. Friday, January 23: Association of Enonomic Biologists' meeting; Manchester and North of England Orchid Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*A simple and efficacious way of Smoking glasshouses with Tobacco to kill green fly.*—I have used garden pots for this purpose for these ten years. The *modus operandi* is to put a quantity of coke, coal, or short pieces of wood made red hot in the bottom of the pot, and then on these the tobacco paper. That which I use is picked into small pieces before it is put on the hot cinders. The pot is then placed where it is wanted, and the embers blown with a pair of bellows, whose nose is introduced through a hole in the side of the pot near its bottom. Many a time have I lost my dinner when, being upon 12s. a week, I could ill afford it, through the use of these same bellows, and my object now is to introduce to you a plan by which such dire disasters may be prevented, and that is by the use of a porridge pot (in Scotch vernacular)—a tar kettle or plumber's pot (in English). I punch out three holes in its bottom, one inch in diameter, and these afford means for a current of air to pass through the fuel. Such an apparatus is easily obtainable, and being cast-iron will last and answer the purpose perfectly for very many years. *James Cuthill, Florist, Camberwell, Gard. Chron. January* 19, 1850.

BULB GARDEN.

SISYRINCHIUM BERMUDIANA.

Members of the Iris family, several of the Sisyrinchiums are charming little plants, some suitable for dry and sunny positions, while others require to be grown in moist, or even boggy soil.

Sisyrinchium Bermudiana (Fig. 14), the Bermuda Blue-eyed Grass, is a little tufted plant with narrow leaves, and stems from one foot to eighteen inches high, each bearing several pendant, deep blue flowers. In warm, light soil it soon establishes itself by means of self-sown seedlings, these coming up thickly all around the old plants.

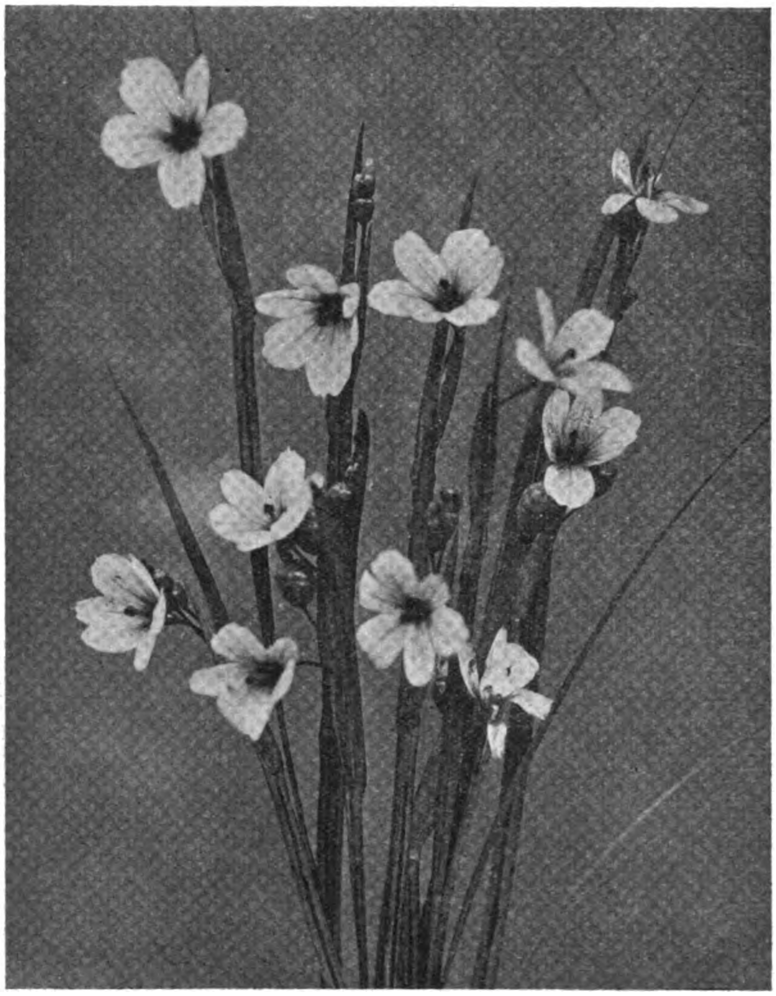


FIG. 14.—SISYRINCHIUM BERMUDIANA.

A closely allied species is the North American S. angustifolium, with narrower leaves and rather smaller flowers. It may be considered only a narrow-leaved form but it is somewhat hardier than the other,

One of the best and most attractive members of the genus is the Chilian S. striatum. It is easily grown and is worthy a place in any garden. If seeds are sown in autumn where the plants are to flower they readily germinate, and by the next summer the seedlings will have developed into strong, Iris-like plants, the stems reaching a height of from two feet to three feet. The flower spikes appear in June and give a succession of yellowish, striated flowers until the end of the summer.

Both this Sisyrinchium and the blue-flowered S. Bermudiana are excellent subjects for naturalizing in the Fern border or open woodland. A pretty, hardy plant is the Spring-bell (S. grandiflorum), a North American species, with erect, narrow leaves, and stems nearly a foot in height, each bearing a pair of rich, dark purple flowers, in April and May. There is a white variety of this species and both require moist conditions. *W. I.*

NARCISSUS SCARLET PERFECTION.

The beautiful, large-cupped Barrii and incomparabilis varieties of Narcissi have their many devotees both among the hybridists and the flower-growing public, for it is in the blooms of these sections that the bright Apricot and Orange-red shades of colour have reached high development.

Narcissus Scarlet Perfection (Fig. 15) belongs to the former section, and the illustration shows that it is a very finely balanced flower. The perianth-segments are of good texture, broad and overlapping, and the colour is a delicate, sulphur-yellow, which forms an admirable setting to the richly-coloured, Orange-scarlet cup. The flower is well-poised on the stem and does not hang downwards—a fault in too many of the newer seedlings. The widespread cup is neatly frilled and not so deeply serrated as to give it a ragged appearance. Scarlet Perfection was shown by Messrs. R. H. Bath, Ltd., before the Narcissus and Tulip Committee of the Royal Horticultural Society, on April 10, 1923, when it received a Preliminary Commendation. This award is made to flowers of outstanding promise and distinction and is reserved for new seedlings of which only one flower is exhibited.

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Cypripediums.—Members of the cool-growing, winter-flowering sections of these plants have been blooming for some time past, and after the flowers are cut they should be given attention at the roots. Cypripediums, especially those of the C. insigne type, are of easy culture and make ideal plants for the amateur. There is now a great diversity in both colour and shape of the flowers in the many hybrids, as very great progress has been made by hybridists with the cool-growing section of these Orchids. Towards the end of the present month the work of repotting should be commenced. Any plant that is in a very pot-bound condition should be given attention by removing it from its receptacle and affording it a fresh pot. If the variety is a choice one and it is desired to increase the stock, the specimen may be divided. Cut away all useless back growths, leaving two or three behind each lead; the portions may be potted separately in small pots or made up afresh into larger specimens. Where it is considered necessary the plants should be shifted into larger receptacles without undue root disturbance. Good fibrous loam should form the chief portion of the compost; remove all the earthy portions, break up the material into rather rough pieces, and add about one-third its bulk of good, fibrous peat or Osmunda-fibre, a small quantity of chopped Sphagnum-moss, and sufficient crushed crocks to render the mixture porous. The pots should be well drained, and for a time after repotting the compost should be kept on the dry side, but the plants will be benefited by a light spraying overhead each day. So soon as the roots are pushing freely into the new soil, they should be afforded liberal supplies of water. Specimens growing in large pots that will not be repotted, will be benefited by being resurfaced with fresh rooting material; first pick out all the old decayed materials from between the roots and substitute fresh compost. In repotting the plants spread out the roots and work the compost well between them, pressing it firmly, and filling the pot almost to the rim. Care should be taken not to break the roots.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Alterations.—Where it has not been possible to complete alterations in the form of flower-beds or direction of walks, the work may still be done, leaving all vacant beds dug and the surface soil rough. The surface of old paths may sometimes be renewed by skimming off a few inches of gravel and turning it over so as to bring the part that had previously been below uppermost to form a fresh surface, which must then, of course, be raked even and rolled. Paths which are much worn and have become uneven should have the surface pricked over and be coated with a layer of new gravel.

The Seed-List.—If the seed-list has not already been compiled it should be done forthwith. Many beautiful flowers are easily raised from seeds and there is little difficulty in maintaining a brilliant display of colour in the garden with these during the summer and autumn. Hardy annuals provide us with a great variety of highly decorative plants and those which may be sown where they are to flower include Candytufts, several of the annual Chrysanthemums, the exquisite blue Nigella Miss Jekyll, Clarkias and Godetias in great variety, the lovely rose Mallow, Lavatera trimestris, annual Poppies, Coreopsis Drummondii and C. tinctoria, both free-flowering plants and useful for cutting: the annual Larkspurs and Gaillardias, Collinsia bicolor, the showy Californian Poppies, Eschscholzia in many beautiful shades, Mignonette, Night-scented Stock, Mathiola, the brilliant Nasturtiums, both dwarf and climbing varieties, the beautiful dwarf blue Nemophila insignis, Cornflowers, Erysimum Perofskianum, Eutoca viscida, white, yellow and purple Sweet Sultan, Gypsophila elegans, Phacelia campanularia, Kaulfussia amelloides and Viscaria oculata.

Bedding Plants.—Stock plants of Heliotropes, Salvias, Lantanas, Verbenas, etc., which are to provide cuttings for summer bedding plants should now be introduced to a moderately warm house and encouraged to make new growths. So soon as the shoots are about three inches long they should be inserted in sandy soil and placed in a close case until rooted. Early struck plants may be topped so soon as they have made sufficient growth, to provide a second batch of cuttings.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Peach House.—The early Peach and Nectarine house having been thoroughly washed and cleansed, the trees evenly and thinly trained, and the border top-dressed, the house should now be closed and the trees started. Spray them overhead on fine mornings and damp the walls and paths. Admit air through the top ventilators when the thermometer registers 50°, and close them at two p.m., gently spraying the trees, etc., with tepid water. Do not allow the temperature to fall below 45° at night. See that the borders are well soaked with tepid water, for on no account should they be allowed to become dry at any time. Introduce another batch of Strawberries to heat to follow those in the early vinery. Fumigate all Peach houses at the time the trees are started, especially when pot plants have been grown in the same house.

Late Grapes.—It is advisable to cut all bunches hanging on the vines with a good length of stem, placing them in a dark room in bottles of water containing a few pieces of clean charcoal. The Copped Hall Grape bottle is the best I know, as this enables the bunch to hang clear and free of the glass. Make a weekly inspection to see that there is no damping in the berries, and keep the bottles filled with soft water. Maintain a temperature of 45° in the Grape room. The vines should be pruned immediately, and the houses washed with paraffin, soft soap, and hot water. Remove the old ties, whether of raffia or string, and burn them: rub all wires and iron work with a paraffin rag. If the vines are free from insect pests, very little cleansing of the rods will suffice, but should red spider or mealy bug be present, every care must be taken to destroy these pests; cyaniding is undoubtedly the best remedy. Another pest of Grapes is making its appearance, a fly which lays its eggs on the young foliage, hatches very quickly, and eats its way on to the bunches where it pierces almost every berry. Remove the loose soil to the roots and substitute a good top-dressing consisting of three-parts rich fibrous loam, a liberal sprinkling of soot and clean wood-ash, and a 7-inch potful of bone-meal. Thoroughly water the borders, as no water will have been given whilst the ripe fruit was hanging. Open the ventilators and keep the vinery as cool as possible until the time comes for starting the vines into growth.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Propagation.—At the present time several important soft-wooded subjects claim the attention of the plantsman in the matter of propagation by cuttings and with the lengthening days the list of claimants will increase. Although this method of propagation is regarded more or less as a simple operation, it is well for the operator to keep in mind the fact that successful plant culture depends very largely upon how far the plants are protected against serious checks throughout their growth. Obviously the effect of such checks is more damaging during the early stages of their existence. Every operation, such as potting, transplanting, stopping and pruning, constitutes a temporary check, and the cultivator's efforts should be directed towards a minimising of the risks attending it. When raising plants by means of cuttings it is essential that they should be given the best possible start, and if flagging can be prevented, root formation will be accelerated and a greater degree of success will ensue. Towards this end, therefore, the soil, pots or pans, and the frame for the reception of the inserted cuttings should be prepared beforehand, so that after the cuttings are removed from the parent plant, they may be inserted and placed in the propagating frames with the least possible delay. On bright days a covering of light paper may be necessary to ward off the sun's rays.

Taking and Inserting the Cutting.—Other little observances in this simple operation are just as important and include a careful selection of the cuttings, which should be short jointed and firm, without being hard, neither should they be of coarse growth. When a dibber is used it should be made blunt at the end, not pointed, and when inserting the cuttings care should be taken that the base of it rests upon firm soil at the bottom of the hole made by the dibber, while in firming the cutting the pressure should be made at the base and not at the neck. When watering the cuttings, make sure that sufficient water is applied to well moisten the whole of the soil in the pots or pans.

HARDY FRUIT GARDEN

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

The Orchard.—The pruning and other necessary work amongst orchard trees has been delayed owing to the recent heavy rains and gales. Bush Apple trees should be pruned with judgment: certain varieties, such as Early Victoria, Lord Grosvener, Lord Derby, Royal Jubilee, Lane's Prince Albert, S. T. Wright, The Rev. W. Wilks, Egremont Russet, St. Edmund's Pippin, Charles Ross, Rival, and Cox's Orange Pippin, respond to closer spur pruning than others. Most of the above varieties grow very upright, and outward buds should be left to ensure a good shaped tree. Lane's Prince Albert does not grow so upright, and in this case it is necessary to prune to a side bud or an inside one to keep the trees in shape. Blenheim Pippin, Peasgood's Nonesuch, Gascoyne's Scarlet, Mére-de-Ménage, Worcester Pearmain, and Belle de Boskoop fruit much more freely if the shoots are merely thinned out and not spur pruned. Keep the bushes well open so allow the light and air to enter freely. All cankered parts should be well scraped and afterwards dressed with equal parts of Stockholm tar, clay and gas tar; if Stockholm tar is used with clay only rain will wash it off. Brown Rot is very prevalent this year, especially on Cox's Orange Pippin Apple: the affected parts should be cut off, collected at once, and burnt.

Bush and Pyramid Pears.—These trees should be pruned according to the habit of the variety. Some sorts grow more upright than others, and this type includes Williams's Bon Chrétien, Pitmaston Duchess and Beurré Hardy; these should be pruned to outward buds. The following varieties are more spreading in habit: Beurré Diel, Josephine de Malines, Winter Nelis, Emile de Heyst, and Nouvelle Fulvie. Judgment must be used in pruning this section, for it is not always advisable in their case to prune to an outside bud, as it may lead to an unsightly tree, covering too much ground. The undergrowths and inside branches should be thinned and all dead wood removed in order to admit plenty of light and air. When the pruning is completed all the prunings and leaves should be collected and burned.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Salads.—It is most important to keep up a continuous supply of salads for use, therefore every attention should be given to salad plants growing in frames. Air should be admitted to Endive and Lettuce on all favourable occasions, and plenty of covering material kept handy in case of severe weather. Another sowing of Lettuce seeds should now be made in light soil in boxes and placed in heat. When the seedlings are large enough, prick them off into other boxes or heated frames in order to keep up a continuous supply. Mustard and Cress should be sown regularly in boxes in heat; do not cover the seeds, but place slates over the boxes until the seeds have germinated satisfactorily. All decaying leaves should be picked from the bed of Italian Corn Salad; this green salad should be more extensively grown, as used in conjunction with Beetroot it provides a welcome change. Plants raised from seeds sown in the autumn will keep up a continuous supply of Corn Salad in the open ground during the winter. A first sowing of Cucumber seeds should be made now; sow the seeds singly in sixty-sized pots and place them in the propagating house. Be sparing with water until germination has taken place.

Asparagus.—This choice vegetable may be forced readily now under the plant stages in any suitable warm greenhouse or in heated pits. Place the forcing crowns in soil and cover them to a depth of three inches or four inches. Guard against sudden rises in temperature, and always use tepid water for watering.

Seasonable Work.—Take the opportunity in wet and frosty weather to do any work that is necessary in sheds and storehouses, as much valuable time will be saved in the spring. Look over the stocks of Onions, Shallots and Garlic in store, and also examine Potatos that are not clamped, for bad ones. Have all tools cleaned, sharpened, and put in order. Labels may be got ready for use and painted. Pea and Bean sticks may be taken into some place under shelter, sharpened and tied in bundles.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Sowing Half-Hardy Annuals.—Preparations may be made in bad weather for the sowing of half-hardy annuals in well-rotted loam, mixed with a fair amount of leaf-mould and plenty of sharp river sand. It is important that the boxes be filled completely with soil, making that in the sides and corners very firm. Before sowing the seeds saturate the soil thoroughly.

Antirrhinums.—Seeds of Antirrhinums may now be sown in heat. If signs of damping be noticed in the seedlings remove them to a drier atmosphere: dusting the seedlings with flowers of sulphur will check this disease.

Bush Fruit Cuttings.—Prunings that have been saved may now be made into cuttings, tied into bundles, and heeled in sand out-of-doors, where they will callous slowly and be ready later to line out into their rooting-quarters.

Onions.—If large bulbs are wanted for the kitchen, Onion seeds may now be sown in heat. Leeks, if required for culinary purposes larger than those obtained from outdoor sowings, should be raised now from seeds sown in heat.

Heliotrope.—Stock plants of Heliotrope may now be introduced to a house having a warm temperature, and syringed daily to assist growth. The cuttings will root very quickly in bottom heat.

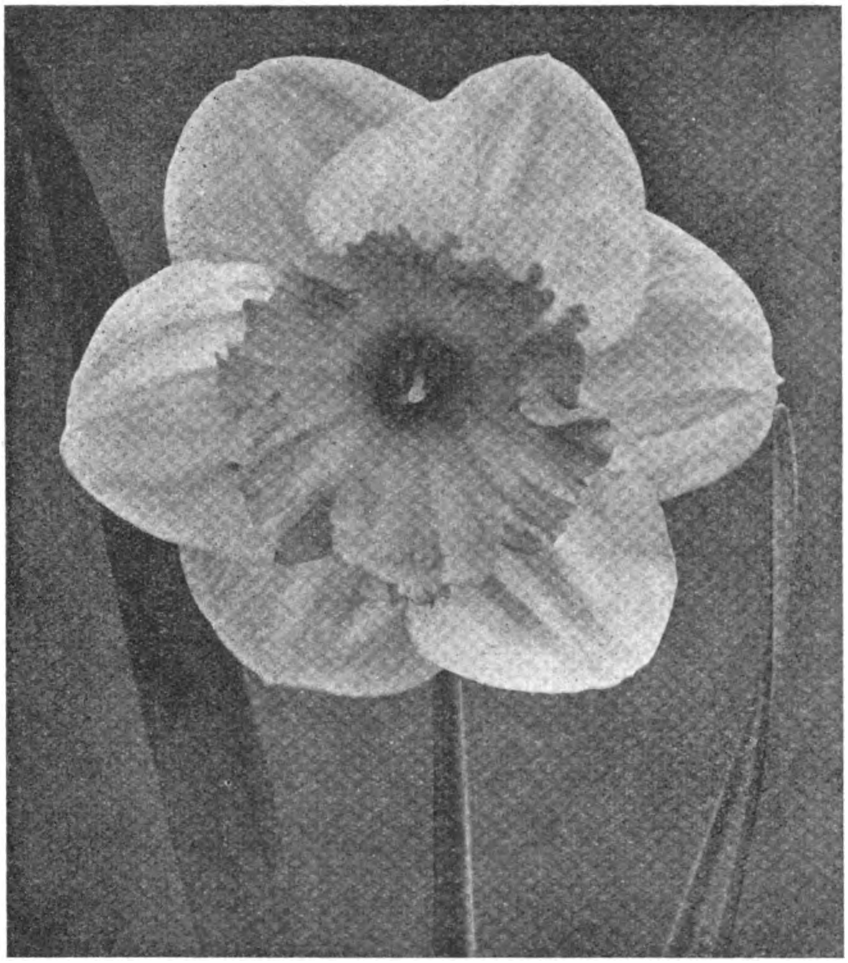


FIG. 15.—NARCISSUS SCARLET PERFECTION.
(see p. 33)

Violets in Frames.—These plants require great care. Pick off leaves that have damped, stir the surface soil, and admit air when the weather is favourable for ventilating.

Kitchen Garden.—Dwarf early Peas, intended for planting out later on a sheltered border, may be sown in turves, in boxes or pots. Place the seeds in a cool Peach house and allow them to germinate slowly. All fruit trees that have been removed recently should be given a good mulch of well-decayed manure as a protection from frost.

Vines.—If well finished Muscat Grapes are required by August the house should be closed, and the night temperature kept at 45°. Damp the bare spaces of the vinery slightly and syringe the vines early on suitable days. An examination of the border should be also made and water applied if necessary.

INDOOR PLANTS.

GLOXINIAS.

Gloxinia tubers which have had their season of rest may shortly have the old soil shaken from them and started into growth. It is advisable to reserve a portion of the batch for prolonging the flowering season, and start these into growth about a month later. The compost used for the boxing or potting of the plants, whichever is preferred, should consist of four-parts loam and one part each of leaf-mould and peat, with sufficient sharp sand to render the compost porous. For subsequent pottings a sprinkling of wood-ash and bone-meal should be added to a similar compost.

These very useful summer flowering plants succeed best in an intermediate temperature, and should, after the end of March, be shaded from the direct rays of the sun. A close, stuffy atmosphere, especially when the plants are in flower, should be guarded against: also never crowd the plants with other and taller-growing subjects. Given favourable treatment little or no support will be needed for the flowers.

Growth should be restricted to one shoot on each tuber; retain the healthiest growth and rub all others off as early as possible. Each plant should be allowed to develop four leaves only, all others, and also all sideshoots being removed as they appear, with the point of a pencil or sharp stick.

Great care should be taken not to damage the centre of the plant where the flower buds form, but from time to time each plant should be examined and the small central leaves rubbed off when they are less than half an inch in length. It will be noticed that these form all around the flower buds, and their removal is an operation which calls for the greatest rare.

A fully developed plant will thus consist of four leaves only, which, in consequence of the timely removal of all superfluous leaves and growths, will reach a considerable size. The flowers are developed on stems proportionately strong and rarely need support.

The leaves are very brittle and sometimes completely cover the pot by the time the final potting is due. This calls for great care when the plants are transferred to the pots in which they are to flower.

The method which I employ is to remove the plant carefully from the pot, then, after placing a little of the compost in the new pot, which should be provided with ample drainage, place the empty pot from which the plant has been removed inside, and fill the space round this with the compost. Press the soil moderately firmly, using the fingers for this purpose, and leave it level with the rim of the new pot. The top of the smaller pot should be a little higher than the level of the soil and should now, with a slight twist, be removed. The cavity left will be a little larger than the ball of soil on the plant. After dropping in the latter carefully, apply an even pressure of the fingers to the soil, which will sink sufficiently to allow for the applications of water.

A little practice will enable the operator to grasp the details of this method of potting, which can be used to advantage whenever any other plants with brittle or spreading foliage are to be transferred to larger receptacles, as it reduces the risk of damaging foliage to a minimum.

During all stages of growth the syringe should be used freely, as Gloxinias are subject to attacks of thrips. When the pots are filled with roots and buds are developing an occasional watering with diluted liquid manure will help to prolong the flowering season and also to improve the tubers.

Water should be gradually withheld in the autumn, and when the foliage has withered, the pots should be stored in a warm pit or greenhouse, taking care not to place them near the water pipes.

The soil should not be allowed to become wet, but the other extreme is equally injurious.

It is advisable to sow a few seeds each year to keep the batch up to the required number. The seedlings, if well treated, will make useful plants by September. *Charles Hodgson, Acton Place Gardens, Sudbury, Suffolk.*

CODIAEUM (CROTON).

The full beauty of the Croton is best exhibited when the plants are grown in a house by themselves, as, unlike many stove plants, they delight in an abundance of sunshine. If a special house cannot be devoted to them they should be grown on one side of the stove-house, in order to limit shading so far as possible.

They may be propagated from cuttings inserted in the end of January or early in February. The cuttings should be rooted singly in small 60-sized pots in a propagating frame with a brisk bottom-heat. Great care should be taken to prevent them from flagging, and this may be obviated by spraying them lightly and shading them if required. As they become rooted, air should be admitted to the frame gradually, and the plants exposed to an increased amount of light.

A suitable compost for these plants consists of two parts good fibrous loam pulled into small pieces by hand, one part leaf-mould and peat in equal proportions, with a sprinkling of silver sand, lime rubble, charcoal and bone-meal.

A common error in growing Crotons is to place them in larger-sized receptacles than are needed. If shifted from the 60-sized pots to 48-pots and finally to 32-pots, the plants will make fine decorative specimens. If the soil when they are potted is in a moist condition, the plants will only need spraying overhead at mid-day for the first day or two, after which the roots should be given a good soaking. Very careful watering and airing are essential afterwards, admitting air on fine days only and closing the house early. Syringe the plants, walls, etc., to promote a moist atmosphere. Plants that have filled their pots with roots will be benefited by watering them with liquid manure or feeding them with a slow acting fertiliser.

The chief enemy of the Croton is the scale insect, which may be kept in check by frequent sprayings with an insecticide after the sun has passed off the house, again syringing with clean water early the following morning. As a last resource they may be sponged, but very often, unless special care is taken, the leaves will be bruised by so doing, especially those with twisted foliage. In regard to temperatures, much depends on the weather. The minimum temperature by night should be 65° rising to 75° by day with fire heat. During the summer, after closing the house early in the afternoon and giving a thorough syringing, there need not be undue consternation by the grower if the temperature rises to 100°.

Although Crotons thrive under very humid conditions, it is imperative, should the temperature of the house be low in the morning or any other time, that damping of the paths, etc., should be deferred until the house is at a proper degree of warmth again. *T. Baines.*

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

PHLOX DRUMMONDII.

This popular annual, available in many beautiful colours, is very useful for pot culture, and for this purpose is worthy of more general cultivation. To secure a spring display the best time to sow seeds is from the middle to the end of September, and they may be sown either in a cold frame or a low, airy pit. Thin sowing is desirable, using at this stage a light, sandy compost. The pans or boxes should be covered with glass until germination takes place as mice often prove troublesome. When large enough to handle, each young seedling should be placed in a thumb pot, and when well rooted, it may be shifted into a 48-sized pot, in which sized receptacles excellent plants may be flowered.

Phlox Drummondii requires very careful watering during the winter months; during this period the plants need a position well up to the roof-glass in a bright airy greenhouse.

Plants grown under suitable conditions should be compact and sturdy, and require little support beyond a neat central stake, to which the shoots may be neatly supported. In the immediate neighbourhood of London, I find autumn sowing is not a success owing to fogs and lack of sunshine; under such circumstances it is best to sow during January, when better weather conditions prevail. Any of the many varieties listed may be used, but Messrs. Sutton and Sons offer several varieties that are specially useful for pot culture, viz., Purity, Pink Beauty, Mauve Beauty, Snowball, and Fireball. All the intermediate varieties are suitable for growing in pots.

POLYGONUM ORIENTALE.

This very graceful plant grows about three feet tall, and bears drooping racemes of rose-crimson flowers, which are very useful for cutting. As it is a quick-growing plant, there is no need to sow the seeds until about the middle of February. Place the seed pan in a cool house, and when the seedlings are large enough, place them singly in small pots, eventually potting them on as they require it until they are in seven-inch pots, in which they should be flowered. A suitable potting compost consists of good loam; in this the growth will be sturdy. Perfectly cool conditions are essential, or the growth will be weak and weedy. A central stake should be used, to which the lateral shoots should be neatly secured. This plant is very effective for large groups in the conservatory.

RHODOCHITON VOLUBILE.

There is probably no more charming climber for the conservatory and greenhouse than Rhodochiton volubile, and yet it is rarely listed in catalogues. It produces its flowers with wonderful profusion over a long period, and when the dark, blood-red corolla has faded, the large, pale red calyx remains in beauty for many weeks.

Seeds sown about the middle of January, in a temperature of about 60°, should be covered very lightly, otherwise they may rot. Transfer the young seedlings to small pots, and at this stage use a light, rich compost, and keep them growing steadily without any check in a temperature of 50° to 60°. Pot them on as they require it, until they are in eight-inch pots, in which size excellent examples can be grown. A compost consisting of three-parts good mellow loam and one of leaf-soil and sand suits this plant very well.

Rhodochiton volubile climbs by means of the twining leaf petioles, and should be kept staked from the time it is a few inches high until it may be allowed to climb up strings or wires placed near the roof-glass. As growth advances the plants should be accustomed to cooler and more airy conditions, and when four feet to six feet in length may be removed to the conservatory to be trained as suggested.

Although well adapted for pot culture, this climber is seen at its best when planted out in a well-drained bed or border; thus treated it is splendid during its second year, for although it gives such excellent results as an annual it is really a short-lived perennial, but usually is not worth keeping for a third year. *J. Coutts.*

NURSERY NOTES.

CYCLAMENS AT READING.

A few generations hence Messrs. Sutton and Sons may have acquired a reputation for converting a large number of popular perennial flowering plants into annuals, or, at least, for so altering the habits of such plants as to make it possible for gardeners to sow, grow and flower them within the year. They have converted Cyclamens, and have demonstrated at Reading that these useful flowers may be raised from seeds in February and flowered in November and onwards.

Practically all their beautiful varieties will submit to this treatment and the accompanying illustration (Fig. 16) shows that they submit in generous fashion. The only difference between autumn-sown and spring-sown plants is that the former are slightly larger than the latter and as a natural consequence give more flowers. The secret of success in the cultivation of Cyclamens as annuals lies in the provision of abundant heat, moisture and air. Seeds are placed three inches apart in the usual compost, in shallow boxes, in February, and in these receptacles the seedlings remain until large enough to be potted in 60-sized pots. From these they are shifted, in due course, into 32-sized pots. From February until the middle of May a high temperature is desirable, indeed it can hardly be too high so long as plenty of atmospheric moisture is provided and ventilation is given freely whenever sunshine raises the temperature beyond that of an intermediate house. In June, after a period of hardening off, the plants are placed in cold frames where they remain until October, when they are given the protection of a warm, light greenhouse.

There is no difficulty in growing Cyclamens in this way, but the need for abundant moisture must be emphasized because a dry atmosphere or drought at the roots will inevitably cause disaster and the leaves will become infested with red spider or Begonia mite. Even while they are in the frames plenty of moisture should be provided and well-rooted plants will revel in frequent hosings. Gardeners who take charge of new gardens early in the year, and find no Cyclamens, may now secure a good batch of plants to flower in the Christmas season from seeds sown in February.

All the Cyclamens at Reading are now in fine form and worth a visit, but they will not be at their very best until the middle of February. One house, entirely filled with the brilliant variety named Firefly is worth going a hundred miles to see. Even in early January flowers were abundant, and when lighted by the winter sunshine glinting through the glass, they presented a wonderful picture of elegance and glowing colour. The exact shade of colour is difficult to describe. It is a mixture of scarlet, vermilion, and orange. Some folks would call it vivid orange-salmon, others a shade of tangerine, but whatever the colour name, it is the most brilliant Cyclamen we have seen. Butterfly has such big white flowers that only a few per plant produce a fine effect. Mauve Queen seems a little earlier from most other varieties from autumn sown seeds, and at present it is the most floriferous variety at Reading, although other sorts will soon overtake it and produce flowers in equal abundance. It is no uncommon thing to count fifty flowers open at one time on one plant in February, and even early this month we counted two dozen blooms on a plant in a 32-sized pot. Giant Salmon Pink is a lovely variety, having finely-formed flowers of a beautiful colour borne on long stems above marbled foliage. Shell Pink is a sturdy variety and unusually free-flowering with bloom buds clustering thickly about the tops of the corm. Silver-leaved Salmon is a fine foliage plant with wonderful markings of silver on a deep green ground. Even in the absence of its salmon-coloured flowers it is a most desirable and decorative plant, and twenty years ago would have been grown for its foliage alone.

Cyclamens are superbly grown at Reading. We have never seen them looking better than they are this season, and we congratulate Mr. Janes upon his skill. In all varieties, giants and others, the foliage indicates exceptional health; the leaves are carried on stout foot stalks, while the flowers have long, stout stems which fit them for indoor decoration when cut. Stalks and ties are never used at Reading, as the leaves and flowers stand up smartly without any extraneous support, and below the flowers and leaves there are dozens of clustering flower buds, giving abundant promise of a long and successful flowering period.

There are varieties of Cyclamen to suit all colour tastes at Reading, and Sutton's seed catalogue, sent on application, will furnish a complete list of this firm's specialities of this flower and save us from the offence of giving a long list of names.

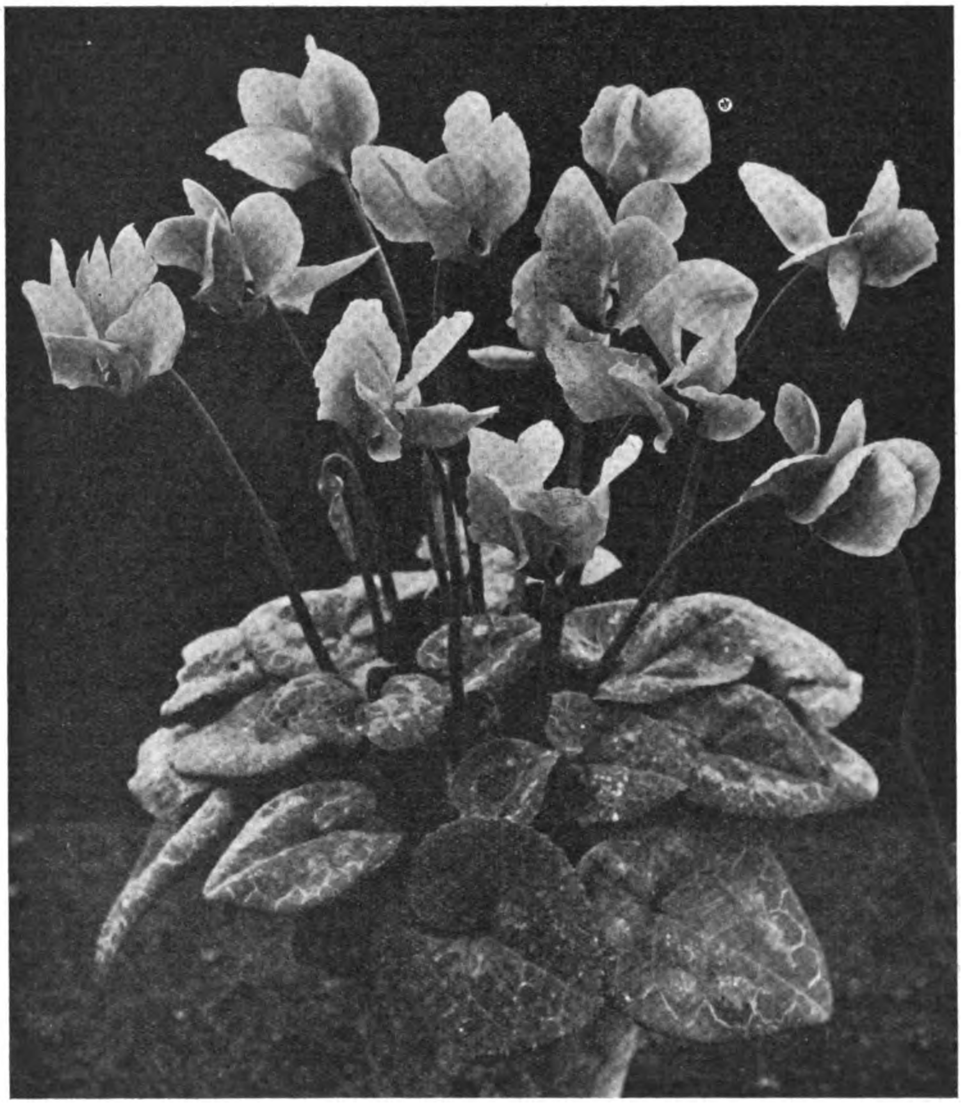


FIG. 16.—CYCLAMEN GIANT ROSE QUEEN TREATED AS AN ANNUAL.

(see p. 36).

NOTES FROM A WELSH GARDEN.

Although the season continues so abnormally mild that a crop of Nasturtium seedlings has sprung up from seeds shed in the autumn by some climbing plants used to cover an unsightly wall, we have not escaped the gales. Indeed, the latter have done more damage to trees and shrubs than we have experienced for very many years.

The first of the Winter Aconites (Eranthis) were in bloom a week before Christmas. These have become naturalised about the borders and rock garden, but they do not increase or attain such a large size as they do in some parts of Denbighshire where the soil is not only stiffer but contains lime. Hacquetia Epipactis, another cheerful little plant in glossy green and yellow, is coming into bloom, but the Snowdrops are not yet (Jan. 6) above ground. Always the earliest among its kind here is the single white Anemone Hepatica, which opened the first of its silvery stars with the Aconites. Few plants in the winter garden flower so prolifically as this one, some big old clumps maintaining a large head of bloom for close upon six months.

Lithospermum rosmarinifolium will, however, run the last-mentioned very closely, for given fairly open weather, it will carry a crop of its exquisite blue flowers from early November to March. At the time of writing this is by a long way the most beautiful object in the garden in so far as blossom is concerned.

Another flowering shrub which happens to have the same specific name, Grevillea rosmarinifolium, an Australian plant, is also well furnished with its curious, rosy-red flowers, but G. sulphurea has never yet bloomed here at this season. The former, moreover, has a sprawling, almost prostrate habit, whilst the latter is stiffer and upright, but whether this is a recognised difference or merely a coincidence, I cannot say. Both are a good deal hardier than is generally supposed.

Erica darleyensis was fully coloured on New Year's Day, and before these lines are in print E. carnea will have assumed the brilliant hue of the full-blown blossom. This magnificent Heath, surely the finest hardy, winter-flowering shrub ever introduced to British gardens, is not grown nearly as widely as it might be. Oddly enough, that feeble thing, E. carnea alba, is always the first of the winter Heaths to show fully-opened flowers, even preceding E. darleyensis, but it is not worth growing—unless there is a better form than we possess. E. lusitanica and E. Veitchii are also already strung with their paper-white and rose-tinted bells, for which the moss-green, plumose foliage makes such an admirable setting.

Whilst most of the Heaths are delightful in winter, by reason of the great diversity in the colour and character of their foliage, two stand out in remarkable distinction just now. One is E. stricta, which has not only a leafage that is quite unlike that of any other in colour and arrangement, but the bright rusty-red of its withered flower clusters is singularly effective, especially when they are wet. The other referred to is Calluna vulgaris var. cuprea, whose foliage is a warm coppery gold throughout the winter months, so that an open woodland bank covered by it is very striking in its effect.

A Japanese Quince (Cydonia japonica) growing on an east wall in a neighbour's garden was bearing on Christmas Day a quantity of fully-opened crimson-scarlet blossoms on all branches that had been trained round to the more sunny side. Some of the newer varieties of Cydonia japonica are very pleasing and they give flowers at a time when a little colour in the garden is most appreciated. Hamamelis mollis was equally early in our woodland and some of the Berberises of the Mahonia group have put up an unusually good show, especially B. Aquifolium and B. Bealei. B. haematocarpa and B. trifoliolata are both singularly attractive, for it is at this season that their horny, steel-blue leaves take on their characteristic and vividly glaucous hue. Beyond this we cannot claim to have had much success with these species. They have proved quite hardy, but are exceedingly slow growers and have not yet shown a flower.

Polygala Chamaebuxus is making a bright patch of colour in the woodland, covering several square yards with its rich green, leathery foliage, among which nestle the innumerable flowers—both the yellow and white of the type and the rosy-lilac and yellow of var. purpurea. These delightful little plants are no less luxuriant on a fully exposed ledge in the rock garden, and being evergreen they give interest to the rock garden when the majority of the alpines have no pretensions to beauty.

Also in the woodland is a Rhododendron that came here labelled R. Silberrhad, which appears to be synonymous with Christmas Cheer, a R. caucasicum cross. This, always the earliest to flower, is already breaking into colour, and its medium-sized trusses of daintily-frilled, clear-pink blossoms, which fade off to white, are very welcome in the early season. Normally these shrubs do not flower until about mid-February, and even then they are, of course, very liable to be ruined by frost. However, this is a Rhododendron that one is not afraid of cutting, and its blooms are very attractive indoors.

To write of Erodiums flowering outside at this season may suggest anything but what is practicable and useful. But we have a group of E. pelargoniflorum which is not only full of flower, but its pale-green, silky, Pelargonium-like foliage and many blossoms are as fresh and unspoiled by the storms of the past few weeks as if the plants were under glass. Even if this is not a choice species it is well worth a place in the mixed border or rock-garden. It grows about one foot high, thrives here in the poorest and driest of light soil and it is said to be just as content in a London clay! The white flowers are one inch across and faintly lined and blotched with rosy-red. The normal flowering period is spring and summer, but our plants are rarely idle in that respect. In some gardens this Erodium produces self-sown seedlings freely, but it has not yet done so here. The plant is a native of Anatolia, where it grows on shady rocks and among caves at an elevation of three thousand feet above sea level. *A. T. Johnson*

HARDY FLOWER BORDER.

TIARELLA UNIFOLIATA.

This uncommon Foam-flower is, like the better known T. cordifolia, a North American species that is an admirable plant for borders, rock garden or woodland. Though it bears a general resemblance to T. cordifolia it is very much larger in all its parts, the vine-like leaves being some three inches across and the flower spikes rising to a height of two feet. These inflorescences are a warmer, creamier-white than those of the common Foam-flower, and their pink stamens give them a rosy flush.

T. unifoliata is, moreover, quite unlike the other species in another important particular, in that it does not run, but grows in a massive, self-contained clump like a Heuchera until it becomes of large size. Further, T. unifoliata is a perennial that needs a rich soil, and if the latter is moist enough the plant will do well in full sun. The leafage is usually carried throughout the winter here, but it does not colour so brightly as that of T. cordifolia. Propagation is easily effected by detaching off-sets and striking them in a cold frame in the late summer.

APERA ARUNDINACEA.

The Pheasant's Tail Grass is one of the most beautiful of the smaller ornamental grasses. It is not quite hardy but will withstand a deal of frost if planted in a dry, hot, stony soil. Forming a bold, dense sheaf of arching, slender blades of a somewhat glaucous-green, and about two feet in height. A. arundinacea is highly ornamental, especially in autumn and winter when the foliage becomes streaked with bronze and yellow. But its most notable feature is the crop of beautiful awns which shoot upwards in the later summer in airy, silken sprays of glistening purple-brown to bend over on all sides with the most elegant and dainty effect. The inflorescences are often three feet long, and in delicacy and grace they have few rivals.

A. arundinacea is liable to seed so freely in some gardens that it becomes a nuisance. This has happened with us during the past few years, the result being that we have restricted it to sunny spots in the woodland and wild garden where the seedlings do not appear to be able to contend with the native and other herbage. *N. Wales.*

PENTSTEMON GENTIANOIDES.

Apart from the many beautiful forms of florists' Pentstemon usually seen in gardens, there are several handsome species which are valuable for growing by themselves in prominent beds, or in groups in the herbaceous border. One of these is the Mexican P. gentianoides, a bed of which has been an attractive feature at Kew during the past season.

Growing from three feet to four feet high, of bushy habit, the half-shrubby stems are clothed with broad leaves some five inches long, and terminate in large, branching panicles bearing Lilac-coloured or mauve-coloured flowers. These are large, over one inch across at the mouth, and are produced throughout the summer in great profusion.

Pentstemon gentianoides is not a hardy plant, but grows freely in any rich, light soil. It is easily propagated by means of cuttings in the early autumn, and these may be kept in a cold frame during the winter. The small plants, after being put out in spring, grow rapidly and soon make good bushy specimens, coming into flower in July.

This species has at various times been confused with P. Hartwegii and P. Cobaea, both closely allied but quite different. The former has narrow-tubed, scarlet flowers with a spreading mouth, while P. Cobaea has dull, reddish-purple to whitish flowers, some two inches long. In this also the panicle is few-flowered and very pubescent as compared with the free-flowered and almost glabrous P. gentianoides. *W. I.*

ALPINE GARDEN.

PHILESIA MAGELLANICA.

Philesia magellanica, or P. buxifolia as it is more usually known in gardens, is an ideal rock garden shrub. Indeed, few would care to risk so choice a subject in the open shrub border. It is dwarf in habit, and of slow growth, forming a mat of wiry, much-branched stems, clothed with hard, glabrous, evergreen foliage, amongst which nestle the large carmine-red flowers, beautiful in outline, as if chiselled by a graver's tool.

P. magellanica requires a moist, well-drained, peaty soil, and a position not too sunny. It early attracted the notice of the hybridist, who, by crossing it with Lapageria alba, raised the interesting bigeneric hybrid, Philageria Veitchii. *Fred W. Jeffery.*

PRIMULA AURANTIACA.

This new Chinese species of Primula has recently been in flower, and promises to be an acquisition to an already numerous family. It belongs to the candelabra section, with the habit of P. japonica, forming rosettes of large leaves, six inches to nine inches long, having sharply-toothed margins.

The spike on the plant at Kew was nearly one foot high, and bore five whorls of bright, Orange-yellow flowers. This Primula came into flower at the beginning of December, when conditions were not favourable for its development.

Probably next spring, in normal flowering time, it may attain larger proportions as well as larger flowers. It is a marsh-loving kind, and was collected by Forrest, his number for it being 21,501. *W. I.*

ORCHID NOTES AND GLEANINGS.

ODONTIODA OBERON.

The first flower of a very richly coloured Odontioda raised at Nether Warden, Hexham-on-Tyne, between Odontoglossum Titania (crispum × Queen Alexandra) and Odontioda Cooksoniae (Cochlioda Noezliana × Odm. ardentissimum) is sent by C. Cookson, Esq. (gardener, Mr. Stables).

The sepals and petals are bright ruby-purple, with a slight blush tint at the tips; the lip is cream-white, densely spotted with rose-purple. The fleshy column is white, contrasting well with the dark colour of the segments.

The cross is specially interesting to the raiser for both parents are Cookson hybrids of 1909 and 1910, the best forms of which are still in the collection.

Mr. Cookson also sends flowers of his bright novelty of last year, Odontioda Warden, a flower of fine shape and light scarlet in colour.

ODONTOGLOSSUM BROTEHAM.

With other Odontoglossums Mr. Cookson sends a grand flower of this fine hybrid between Odontoglossum amabile and Odontoglossum Lambardeanum that compares favourably with the largest and best coloured Odontoglossums known. All the segments are broad, with large, confluent, Tyrian-purple blotches, between which thin white lines appear running to the narrow, white margin.

O. Lambardeanum (coeruleum × Vuylstekeae) was one of Mr. Phillips' hybrids and was much used for crossing in his collection at The Glebe, Sevenoaks, and always with the best results.

GOVERNMENT BOTANIC GARDENS.*

An invitation to deliver a Sir George Birdwood Memorial Lecture comes as an especial honour to one who has been indebted to Sir George for help in connection with economic enquiries in their historical aspect. Yet the acceptance of that invitation by one who has had occasion to investigate further questions already illuminated by Sir George's touch has involved responsibilities he would have found it more difficult to undertake, had not the Committee of the Indian Section of the Royal Society of Arts, with a kindness for which he has to thank them, prescribed the subject to be discussed.

Sir George's comments on Garcia show that the work of Botanic Gardens interested him, and suggest that he regarded it primarily from an historian's standpoint. Though it be impossible now to treat the theme with all Sir George's erudition it is desirable to approach it in Sir George's spirit. To an audience like this Sir George might have illustrated from Indian experience the purposes Government Botanic Gardens fulfil, though he would have had to refer, in passing, to Botanic Gardens other than Indian. All botanic gardens depend for success in their undertakings on their capacity to enlist the sympathetic co-operation of cognate organisations. But when explaining what a botanic garden is, Sir George could not have confined his references to Indian examples. Notwithstanding the uniformity of purpose which enables botanic gardens to render each other effective service, these institutions cannot claim a corresponding uniformity of origin. The Government Botanic Gardens of Asia, in particular owe their formation to motives rather different from the reasons that have led to the existence of most of the Botanic Gardens of Europe.

Many who take pleasure in visits to Botanic Gardens express their inability to discriminate between an establishment of this kind and a public park. Some who derive benefit from such visits seem to imagine that a botanic garden must subserve a horticultural purpose. Botanic Gardens do occasionally possess amenities that render them places of popular resort; they often supply information that gardeners are glad to secure. Yet, however natural these somewhat discordant ideas may seem, they overlook the fact that a botanic garden exists to further botanical ends.

Botanical ends have been modified oftener than once since the Greek term "botanicey" first came to indicate, in English letters, the science of "knowing plants," and was used in order to contrast the study of plant-characters with "phytology," which, even after the middle of the seventeenth century, still was "the art of ascertaining the temperatures, virtues, and uses of plants as tending to the curation or sustentation of the body." This particular definition was written at Oxford and was published in 1659. It is desirable to note the place and the date. A generation before this definition was formulated, the University of Oxford had been supplied with a chair for the teaching of "botanicey:" that University had to wait till a decade after this definition was published before it found a "professor of botanicey"—the first of the kind in England—to fill that chair.

Phytologists, intent on the study of plant-qualities, had been conscious, since the middle of the sixteenth century, of the pressing need for a further knowledge of plant-characters, The doubling of the Cape and the discovery of the Western Hemisphere had resulted in an almost overwhelming influx of new material; "phytologists" were no longer able to discriminate, by classical or mediaeval criteria, between plants whose products were useful and others whose products were valueless or might be harmful.

This renaissance co-partnery between "botanicey" and "phytology" subsisted so long as the study of plant-structure and plant-function lay outside the domain of "natural history." Their alliance was so close that the science of "botanicey"—now "botany" for short—came to be looked upon as the basis of, rather than as an adjunct to, the "art of phytology." In 1663 those who in this country laid down the rules that should guide the conduct of seekers after scientific truth made it an axiom that the improvement of new natural knowledge for use should go hand in hand with its improvement for further discovery. By the middle of the eighteenth century "botanists" had come to realise the importance of plant-function on the reproductive side, and to believe that a solution of the "mystery of sex" might enable them better to classify the vegetable kingdom and to elucidate the natural history of plants. They could now study plants philosophically · "plant-distribution" and "plant-association" came to receive as much attention as "plant-characters" and "plant-qualities." This of necessity made the "botanist" also a "phytologist"—a modification wholly beneficial. Unfortunately, however, the "phytologist" of 1750, the year in which this wider philosophy of plant-study was first formulated, did not require to profess mastery of the science of "botany"; the application of the natural knowledge of plants, which was the "phytologist's" duty, was still considered an "art."

The earlier half of the nineteenth century brought further changes. The study of "vegetable statics," hitherto a branch of "natural philosophy," was found to belong to biology as well as to physics: anatomy demonstrated the existence, chemistry tried to explain the purpose of the "cell." Intensive study of the plant as a vital mechanism appeared to be possible without an extensive knowledge of plants as living organisms; by a process of reasoning familiar in other connections, students of "plant-structure" and of "plant-function on the nutritive side" came to regard themselves as the people with whom wisdom must die. They arrogated to themselves the designation "botanist": students of plant-characters and plant-qualities, of plant-distribution and plant-association were, at best, only "natural historians."

A new century has seen further modifications. The study of plant-function on the nutritive side, whether under those normal conditions that we term physiological or those abnormal ones which we regard as pathological, has made it clear that growth depends on factors other than the nature of the substratum. Plant-associations now possess a biological significance so profound that students of oecology seem at times disposed to relegate "morphology" to the position that laboratory research in the nineteenth century deemed appropriate to cabinet investigation. On the other hand, the study of the "mystery of sex," renewed in the nineteenth century with a vigour induced by the mastery of experimental method, has been extended with success into realms undreamt of in the eighteenth century. As a result the study of the characters and qualities of plants has acquired a new importance, both for those engaged in the botanic garden or the field in handling old and in raising new plants, and for those busy in the herbarium or the museum in supplying the systematic and synoptic data without which natural knowledge cannot be applied so fully as it should. The tendency, displayed in the eighteenth century and insisted on in the nineteenth, to regard the application of natural knowledge as a matter which concerns only the arts and crafts interested, has for the time being disappeared. Now, even more definitely than in 1750, botany is the branch of natural science whose business is the study of vegetation in all its aspects.

(*To be continued.*)

NOTICES OF BOOKS.

Two German Garden Books.

From the publishing house of Paul Parey, Berlin, come two fascinating volumes, the second and third of a series known as "Garden Beauty Books."* They treat respectively of Annuals, and Roses, and are apparently to be followed by similar publications on other gardening subjects.

They are excellently printed on stout art paper, and the black and white illustrations are very numerous and beyond all praise. It would be pleasant to be able to say the same of the coloured illustrations, of which there is a generous sprinkling; but, as in so much .similar work, the greens are in nearly every case a failure, and the "screen" produces a blurred effect, but the standard is as well maintained as technical limitations will permit in the present stage of colour work.

The format of the books is awkward—ten inches square, like a child's toy book, and the cover boards are only of cardboard of a very light colour.

The Rose-book is jointly produced by H. Wilhelm Mütze and Dr. Camillo Schneider and is full of interest to all lovers of that flower. It begins with an excellent historical review, and although this does not add anything to what is already known about the origin of the Rose, it marshals the facts and allusions in a masterly fashion. The development of the modern cultivated flower is then reviewed, and every type has an illustration to itself of a very high order. The types are then dealt with one by one, and in passing it may be observed that the German growers are wise in using "Pernetrose," instead of our own awkward expression "Pernetiana," with its many variations of spelling. The last article deals with "The Rose in Art," and gives many reproductions of classical pictures showing the Rose as part of the scenery; the flower is frequently introduced into the old Italian pictures of the Madonna and Child, owing to the early association of the Virgin with the Rose.

The book on Annuals has also a historical survey, and contains some very interesting reproductions of old wood cuts showing various easily-recognised garden flowers. The genera are then taken aphabetically, a description of the proper method of cultivation for each being given, and there is an aphabetical index at the end of the book for easy reference. An interesting article gives hints on forming hardy plant gardens, and there are a number of quite good plans, a trifle too formal for modern English taste, but well thought out and arranged; and in order that nothing may be lacking, the plants are given in classified lists, according to the month of flowering, and by colours.

The volumes form a distinct addition to gardening literature, and we shall look forward with pleasure to the appearance of further volumes in the series.

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* The Sir George Birdwood Memorial Lecture, delivered before the Royal Society of Arts (Indian Section), on Friday, January 9, 1925, by Lt.-Col. Sir David Prain, C.M.G., C.I.E., LL.D., F.L.S., F.R.S., late Director of the Royal Botanic Gardens, Kew.

* (1) *Das Rosenbuch.* By Wilhelm Mütze and Camillo Schneider. Berlin-Westend, Verlag von "*Gartenschönheit.*" (2) *Einjahrsblumen.* By Paul Kache and Camillo Schneider. Berlin-Westend, Verlag von "*Gartenschönheit.*"

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THE R.H.S. AMATEURS' SHOW.

GREAT was the satisfaction when the announcement was made that the Royal Horticultural Society had decided to hold an exhibition on competitive lines for amateurs only; but that satisfaction has been somewhat diminished by the fact that the Council's conception of the scope which might well be allowed for such a venture appears to be very much smaller than had been expected.

For a number of years past it has been noted with regret that exhibits from private establishments have dwindled almost to the vanishing point, both at the ordinary fortnightly meetings and the larger shows at Chelsea and Holland Park.

It may be stated that the same is true of provincial shows where, except in the cottager and allotment holders' classes, amateurs' exhibits are almost a negligable part, and it is taken to be a plain indication that a combination of contributory causes has made it impossible for private gardeners and amateur enthusiasts to devote the time and effort to growing for shows which they were formerly able to give.

If the truth of this statement is indisputable it is no less regrettable, for the maintenance of keen enthusiasm and continued progress of horticulture is, to a greater extent than can be casually estimated, dependent upon the flower show.

Trade exhibitors are always available to fill tents or halls and make imposing displays. The nurserymen, florists, and seedsmen have done this, and have earned the oft-reiterated compliment, "The trade exhibits make the show."

Despite the apparent ingratitude, it is equally true that the trade has ousted the amateur exhibitor, and in so doing inflicted grave injury upon both the flower show and their own business. Nurserymen and seedsmen, no less than amateurs themselves, should welcome the latest, and in a way the greatest, step the Royal Horticultural Society has taken in organising a show entirely for amateurs. The movement teems with far-reaching possibilities, and is quite capable of giving horticulture such a revival as could not otherwise be conceived.

The one pity is the Council apparently thinks a small affair is good enough, whereas it should be, and might easily have been, the greatest event in the Society's illustrious career.

It is perfectly right that quite small classes should be provided for small amateurs whose gardens are entirely under personal control, and these classes might well be even more numerous, but the R.H.S. is widely different from a parochial cottage gardeners' association, and the schedule of this show should have included classes commensurate with the dignity and capabilities of the larger private establishments from which in years gone by glorious exhibits were readily forthcoming. The exclusion of the commercial element is all the more reason why private horticulture should be afforded the fullest scope to demonstrate to the full its extent and capabilities.

Why, for instance, in so important a section as Roses, should the most important class be for twelve vases? Could not the R.H.S. aspire, at any rate, to come abreast of the Amateurs' Section of the National Rose Society? There is not so much as one class for exhibition blooms in the customary Rose boxes, no class for a group of Roses arranged for effect, and, greatly to the disappointment of lady exhibitors, no decorated table class, or even an artistically-arranged bowl class.

The biggest group of flowering and foliage plants is restricted to the narrow limits of forty-eight square feet, whereas private gardeners exhibiting at Shrewsbury, Southport, York, and Wolverhampton have found no difficulty in furnishing two-hundred-and-fifty square feet.

The best class provided for such important garden plants as hardy perennials is for twelve vases, yet an amateur in the Midlands, before the schedule appeared, sought my opinion as to whether a three-ton motor lorry would bring sufficient flowers for him to put up a creditable effort. He exhibits hardy flowers to this extent locally.

The idea of paring down the show to fit the Horticultural Hall is pitiable. Chelsea Gardens, the Royal Botanic Gardens, Holland Park Rink, any one of them could be well filled, and filled to overflowing, with the exhibits of *bona fide* amateurs, and the enterprise of organising such a show would have a tremendously beneficial effect on the Society, the trade, and British horticulture generally.

Had an appeal been made to the special floral societies, to the trade, and to private donors, an array of cups and trophies fully equal to that amassed for the International Exhibition of 1912 would have been readily forthcoming. Horticultural societies in every district in the Kingdom would have taken up propaganda work, and their members would have entered whole-heartedly into an effort to prove that their particular district or membership could account for the record number of awards.

These thoughts convey an idea of the disappointing aspect of the schedule, but they do not infer that there is the slightest reason to forebode failure for the show. On the contrary, there is every reason why it should be so huge a success that hereafter the R.H.S. will fully realise that, instead of looking upon the amateurs' show as an interesting little diversion from its other work, it will constitute one of the outstanding features in its year's programme.

Amateur horticulture is of greater importance than commercial horticulture, because the latter is dependent on the former, and its own show should hold a very special interest for the whole vast army of amateur horticulturists.

There are forty-two classes in the schedule, and the great aim should be to ensure every class being filled with a goodly number of entries. There is little doubt about the small classes for garden owners who employ no permanent staff. Numbers will undoubtedly run high here, but in the leading classes for twelve plants, twelve vases, groups, etc., we shall expect to find the best features of the show, and the readers of *The Gardeners' Chronicle* will, it is to be hoped, make a point of seeing that the extent of every class far exceeds anticipations.

An abundance of entries sent to the Society early in the year would suffice to show that the Royal Horticultural Hall is totally inadequate to accommodate such an exhibition, and it is important that this realisation comes early enough to admit of alternative arrangements being put in hand in good time.

There are those who suggest that we are losing our skill as plantsmen, and that the gardeners of to-day have not the exhibitors' art of the past generation; the show on June 30 and July 1 must demonstrate the falseness of these beliefs.

One good the show will probably effect is the enthusiasm it will arouse in garden owners and be the means of inducing gardeners exhibiting again in a whole-hearted manner.

An owner of a very good garden confided to me a week or two back that his intention is, if his gardener will exhibit, the latter shall have any prize money he may win and an immediate rise in wages if he is successful. *A. J. Macself.*

GARDENING AT THE PRINCE OF WALES' CANADIAN RANCH.

DURING the time of the Prince of Wales's visit to Canada in the fall of 1923 it was the writer's very good fortune to be invited by His Royal Highness to make suggestions for the improvement and beautification of the immediate surroundings of his ranch house at Pekisko and to prepare a plan of the same. A visit was made to the ranch for the purpose of making a preliminary survey, and, after a scheme of improvements had been outlined, a second visit was made to discuss this suggested scheme with his Royal Highness. It was made quite apparent at this interview that the Prince, whilst keenly interested in having the place improved and beautified in the best possible manner, was desirous that such improvements should be kept quite simple, to accord with the house itself and its furnishings, and to be in keeping with the true character of a Western Canadian ranch. Care had to be taken in the arrangement of the plantations that nothing was planted that would eventually intercept the very fine view to the Rocky Mountains on the west and to the foothills on the south. The scheme as finally decided upon and now well advanced towards completion includes a boundary border on the east, south, and west to be planted with low-growing flowering and berried shrubs and hardy perennial flowers; a rectangular arrangement of paths and flower beds immediately in front of the building; a heavy planting of trees and shrubs along the creek side to form a woodland walk; a simple rock garden, and a kitchen garden, the paths of which are to be edged by borders of hardy flowers.

Within this woodland walk are five trees, planted respectively by His Royal Highness, Sir Thomas Godfrey, Brig.-Gen. Trotter, Major Metcalf, and Sir Walter Peacock, commemorative of the 1923 visit. Engraved plates, with the name and date, mark each of these trees. A narrow border at the base of the building provides space for a foundation planting of climbing plants and flowers.

There are, approximately, five acres within the enclosing fence, but a large area at the extreme west end will be reserved for growing a year-round supply of vegetables for the staff. The whole is enclosed, on the east and west, with a hedge of Caragana arborescens, and on the south, of Cotoneaster acutifolia.

The little garden that had already been developed on two sides of the house for a distance of some fifty feet will be retained in its original form, even to the decrepit, worm-eaten Balm of Gilead that has had to be propped up to prevent its complete collapse, but which forms the centre for a delightful little rockery, on which flourish some beautiful alpine plants, undoubtedly collected from the near-by Rockies.

A gravity system of irrigation is being developed by the construction of an irrigation ditch at a point some distance up the creek.

There is not much to see at the present time, but the simple and informal plantings of old world flowers will eventually give a charm to the place on a summer evening that can easily be imagined, and this will be aided by the natural beauty of the surroundings, to the west the mountains, to the south and east the rolling hills and to the north the creek and groves of natural trees.

The following is a list of trees, shrubs, and flowers already planted. Climatic conditions and altitude limit the choice of material for tree planting to a very narrow range, and to a lesser extent this is true of the shrubbery. There is, however, a wealth of hardy perennial flowering plants to pick from, for very large numbers of the more popular species of these have proved hardy here. It will be noticed that the list contains many old-fashioned flowers, also a number of alpines, which will be quite at home in such a location.

Trees: Acer Negundo, Fraxinus viridis, Northwest Poplar, Picea pungens Kosteri, Populus certinensis, P. Wobstii.

Shrubs: Caragana arborescens, C. pygmea, Cornus stolonifera, Cotoneaster acutifolia, Hippophaë rhamnoides, Lonicera tatarica, Prunus Padus, Salix vitellina britzensis, S. pentandra, S. viminalis, S. v. aurea, Shepherdia argentea, Spiraea arguta, S. Van Houtei, Syringa villosa, S. vulgaris.

Herbaceous Ferennials: Achillea Millefolium rubrum, Aconitum Napellus, Aquilegias in blue, white, rose, yellow and pink varieties; A. clematiquila (?), and A. Skinneri; Armeria formosa, Asperula hexaphylla, Aster alpinus, A. sub-caeruleus; Bellis perennis var. Longfellow, Campanula carpatica, C. glomerata grandiflora, C. grandis, C. lactiflora magnifica, C. media, C. persicifolia, C. punctata, and C. rapunculoides; Carnation Granadin Scarlet, Centaurea ruthenica, Cephalaria alpina, Chelone barbata, Chrysanthemum leucanthemum in variety; Chrysanthemums Alaska, King Edward VII., May Queen, and Mrs. C. Lothian Bell; Coreopsis lanceolata, Cynoglossum Blue Gem, Delphinium Belladonna, D. chinensis, and D. hybridum, Dark Blue; Dianthus Allwoodii, D. barbatus, D. Heddewigii, and D. plumarius; Ægopodium Podagraria, Eryngium aurantiacum, E. Coulteri, E. glaucum, E. planum, E. pulchellum, E. speciosum; Erysimum speciosum, Eupatorium coelestinum, Gaillardia, Galega officinalis, Geum sanguineum Mrs. Bradshaw, Gypsophila paniculata, G. Rokejeka; Helenium Bigelovii, H. Hoopesii, and H. Riverton Gem; Helianthus Daniel Dewar, H. multiflorus; Hesperis matronalis, Hollyhocks, Inula macrocephala, and I. Royleana, Iris versicolor, I. sibirica, I. Maori King, Linum perenne, L. sibericum; Lychnis chalcedonica, L. Haageana. L. viscaria fl. pl.; Lythrum roseum, Malva moschata, Myosotis alpestris, Œnothera odorata, Papaver nudicaule, P. orientale, crimson; P. Beauty of Livermore, P. Mahoney, and P. Salmon Queen; P. pilosum; Physostegia virginica, Platycodon, Polemonium caeruleum, P. Richardsonii alba; Potentilla atrosanguinea; Pyrethrum roseum, Rudbeckia laciniata fl. pl., R. purpurea; Ranunculus acris fl. pl., Salvia coccinea, Saponaria ocymoides, S. scarlet var., Scabiosa caucasica, Silene orientale, Stevia paniculata, Thalictrum adiantifolium, T. aquilegifolium, T. dipterocarpum, and T. glaucum; Verbascum phoeniceum, V. olympicum, and Veronica spicata. *W. R. Reader, Parks Superintendent, Calgary, Alberta, Canada.*

TREES AND SHRUBS.

ALNUS VIRIDIS VAR. MOLLIS, BECK.

THE Green or Mountain Alder, Alnus viridis, is a widely-distributed tree in a wild state, being found in three continents—in Europe, North China, and North America It occurs more often as a shrub than of tree-like growth, being frequently at fairly high elevations. An unusually dwarf form, found on the Swiss Alps, is distinguished by the name var. parvifolia. As a tree or shrub for ornamental planting the type is not of outstanding value, but the variety mollis illustrated in Fig. 17 is undoubtedly one of the handsomest of the Alders.

Compared with the type, the subject of the illustration is more robust and free in growth, and is an attractive tree, particularly during March and early April when freely clothed with the male catkins which develop in advance of the leaves. As the varietal name indicates, it is distinguished from A. viridis by the downy nature of the young shoots and leaf surfaces, also the much longer and more showy male catkins, up to four inches in length. It is a native of Central Europe, being found growing mixed with the type in the Bavarian Alps, the Tyrol, North Austria, and Switzerland.

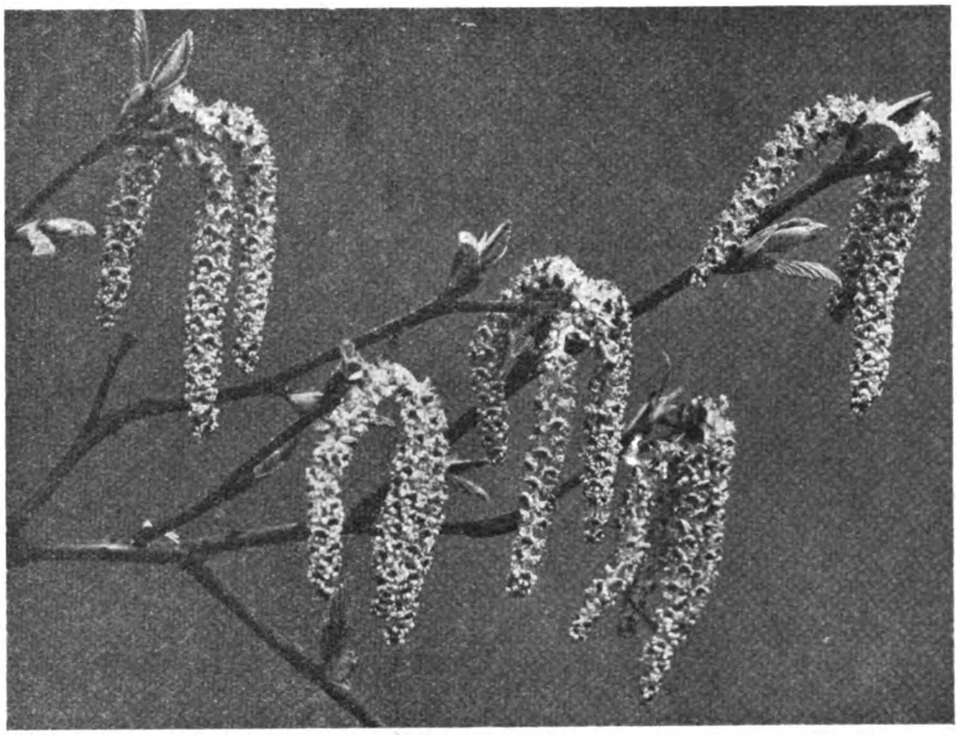

FIG. 17.—CATKINS OF ALNUS VIRIDIS VAR. MOLLIS.

The tree produces seeds freely, but as these may vary, it is worth propagating the best forms, such as the one illustrated, by grafting, using A. glutinosa or A. incana as the stock. *A. O.*

VERONICA SALICIFOLIA.

As there seems from some correspondence in *The Gardeners' Chronicle* at the end of 1923 and the beginning of 1924 (Vol. LXXIV, pp. 309, 355 and 375, and Vol. LXXV, pp. 12 and 28) to be a difference of opinion about the hardiness of Veronica salicifolia, it may interest your readers to know that some time ago my attention was drawn to a very remarkable circumstance in connection with this by Mr. Wood, of Messrs. Wood and Milligan, nurserymen, Corstorphine.

Last spring Mr. Wood sent me some shoots of Veronica Traversii which had been killed by frost, and he was naturally not a little surprised to find that the shoots of some plants of V. salicifolia growing alongside them were uninjured. I paid a visit to the nursery recently and saw the plants. Those of V. salicifolia were still in flower (they were of the form which flowers continuously from June till about October), and those of V. Traversii, which had been cut back, but not killed outright, were forming fresh growths. Now, what fairer test could one have of the relative hardiness of the two species than this? The plants were growing side by side under precisely similar conditions in every respect, and in a fine, dry, rather sandy, fibrous loam, which had formerly been old pasture, Corstorphine is about three miles west of the city of Edinburgh, but is now within its municipal boundaries. It stands over two hundred feet above sea level, is about three miles from the Firth of Forth, but occupies a very exposed site.

I cannot remember if V. salicifolia was among those species which were killed by the great frost of 1893–5, when in this district the ground was frozen in some places to a depth of about three feet, and when so many "hardy" shrubs and other plants were killed, but I am quite certain that since then I have not seen it killed, or even injured, and with me it passed uninjured through the severe frost of November, 1919, when several other kinds were killed outright. No doubt much depends on the conditions under which the plants are growing, but in the case referred to above no special factor enters, as both species were growing under conditions identical in every respect. *A. D. Richardson, Edinburgh.*

TREES INJURED BY THE RECENT GALES.

MANY trees have been damaged by high winds during the recent gales, and those having charge of trees should clear away the debris and attend to the damaged parts at the earliest opportunity.

In many cases broken stumps will have to be removed. In cutting off a stump the cut should be made in a line with the outside of the stem or branch from which it springs. Coal-tar that has been slightly warmed should be smeared over the wounds with a brush. In the case of large wounds this dressing with tar should be repeated. Coal-tar is quite harmless to the trees if used with care, but it should not be applied to the young bark of Conifers. Large hollows caused by the breaking away of limbs from old trees should be filled with cement.

Many young and recently planted trees will require attention. Some of these have been loosened at their roots and should be made quite firm again. In other cases the trees have been torn away from their supports, and new stakes are also required in some exposed positions.

Rose bushes have been blown about and cup-shaped hollows formed in the soil at the base of the plants. These hollows should be filled, and the soil made quite firm. Climbers have suffered, especially those growing on lofty walls. It is often advisable to secure the main branches of these climbers, which have become detached from the wall so soon as the damage is discovered, while the thorough overhauling and general tying of the lateral growths may be deferred until the immediate pressure of work is overcome.

Large numbers of trees have been uprooted and blown down. An examination of the roots is often very instructive. Many roots of apparently healthy trees will be found in a decayed condition. In some cases the surface roots are healthy, while in other cases those nearest the surface are diseased, and those which have penetrated the subsoil are sound. *C. Ruse.*

SOME CHOICE OAKS.

Oaks are not planted so extensively as they might be, considering the fine effect produced by judicious arrangement of the different species and varieties. What finer deciduous tree is there in late autumn than a well grown specimen of Quercus coccinea splendens Knap Hill variety? This fine American Oak with its brilliant crimson scarlet foliage is not surpassed by any tree. Viewed with the sun shining on them, clumps of three or five trees together constitute an object not easily forgotten. The foliage of this Oak is retained for a very considerable period. The writer has a vivid recollection of seeing a large quarter of this brilliantly coloured Oak in the nursery of the late Mr. Anthony Waterer, Knap Hill, Woking, some sixteen years ago. As a tree for brightening up the landscape, pleasure grounds, parks, etc., it is unsurpassed in its effect. When planting this Oak choose specimens five feet to six feet tall with straight stems, good leads and well furnished with roots.

Oaks thrive and make rapid growth in a few years in deep loam of a rather heavy texture, provided they are given attention as regards staking, mulching, and watering in dry weather during the summer. Care should be exercised at all times to retain a good leader; with a little annual pruning and keeping the grass clear of the tree at a radius of two feet from the stems, good specimens will soon be forthcoming. The American, Turkey and Hungarian Oaks are more rapid in growth than the English Oaks.

Another fine Oak that is somewhat rare and seldom seen is the one known as Quercus macrophylla Albertsii. Some years ago I planted six trees of this variety in very heavy, strong, loamy soil; in a few years they made rapid growth, the leading shoots making fully three feet or more growth, in a single season, and with foliage quite one foot in length, and proportionately wide, of a dark brown colour. It is a tree that never fails to arrest attention.

Quercus palustris (the Pin Oak) is another fine American species, the leaves in late autumn being bright crimson, after the style of Q. coccinea splendens. The tree thrives in damp situations, and for that reason alone is to be commended.

The Hungarian Oak, Quercus conferta (syn. Q. pannonica) forms a handsome, much-branched tree of somewhat conical shape. It is very pleasing in appearance during the summer with rather large, light green leaves that turn a nut-brown colour in the autumn. This Oak is a good grower and soon makes a fine specimen to stand alone.

The Japanese Oak, Quercus dentata (syn. Q. Daimio) is particularly good and desirable as a single specimen for the pleasure grounds. Its growth is pyramidal in contour, and it has fine foliage six inches in length by two-and-a-half inches to three inches wide, of a bright green colour during the summer, turning to a russet-brown late in the season. The foliage is retained all through the winter until the following spring, and this adds considerable interest to this fine tree.

Good specimens of Quercus Cerris, the Turkey Oak, may be met with in many parts of the country, testifying to its suitability for most soils. It is very distinct in appearance and a rapid grower in the young state when well established. The side branches should be restricted and and the central shoot trained to a stout cane, when, in the course of a few years, a tree of handsome, pyramidal form will be obtained. There is a variegated form of the Turkey Oak with leaves margined with white.

Mention may be made of the forms of the English Oaks; that known as Quercus pedunculata fastigiata is of upright growth, resembling a Lombardy Poplar. The Golden Oak, Quercus pedunculata var. concordia, is exceedingly effective during the summer, but, unfortunately, this Oak is not a good grower, at least, such is my experience. Like nearly all our English Oaks, the growth of those of the pedunculata section is somewhat slow; the same is also true of the purple form, purpurascens, but apart from that, they are very effective in their colour during the summer time.

As single trees or in clumps for park planting, I have invariably found that the Sessile Oak, Quercus sessiliflora easily surpasses Q. pedunculata in rapidity of growth, also in retaining its foliage for a longer period.

The procedure of planting common Birch alternately with the Oaks in clumps or plantations to act as nurses, is to be commended, and I have practised the same with excellent results. The Birch being a rapid grower has a tendency to draw up the Oak straight and clean, as well as providing shelter. Timely attention in trimming the side growths of the Birches to give free scope to the Oaks until the former are finally removed, with a slight annual pruning and retaining good leads, will result in the Oaks being in a condition to take care of themselves.

Much more might be written on this subject, but the chief object of this article is to point out the value of the various Oaks for ornamental effects in planting. Should it be desired to include a few of the evergreen Oaks, the following will be found suitable: Quercus acuta, a Japanese species, with leaves six inches in length and stout in texture; this is one of the best of the evergreen type; Quercus glabra (syn. latifolia), a worthy companion to the last-named, with large, stout foliage; Quercus Lucombeana, the Lucombe Oak, a sub-evergreen tree, which forms, in time, a large specimen; it is a hybrid between Q. Cerris and Q. Suber. Quercus Suber, the Cork Oak, is an evergreen species; a fine old specimen of this species stands near the lake at Osterley Park, Middlesex, where I had charge of the trees and shrubs for many years. Probably the tree in question ranks as one of the finest in the kingdom, and must be quite a century old, the main branches being banded and chained together; the corky bark is of great thickness. *J. Hawkes, Culworth, Banbury.*

FOREIGN CORRESPONDENCE.

THE EGG PLANT AND THE PEPPER PLANT.

After reading the interesting notes of Mr. S. B. Dicks on the Egg Plant (page 411, Vol. LXXVI), it occurred to me that perhaps your readers would like to know how this vegetable is used in practically every household in Roumania. In this country it is named Patlagele Vinete, and is used as a food in many ways. One method is to cook it on top of the stove, afterwards removing the outer skin and beating the flesh to a pulp with a wooden spoon: a little Onion chopped very finely is then added, with salt, Pepper, Olive oil and vinegar; the whole is well mixed and eaten cold as a salad, which is very agreeable. Another method, similar to the one Mr. Dicks describes, is to cut the fruits into slices, dip them in a good batter, fry them in Olive oil or lard, and eat them hot; those who are interested in the Egg Plant should try this method. Egg Plants are grown here by the million; they are planted in well-manured soil, eighteen inches apart in rows and well watered, as the temperature rises up to 45° Reaumer, and sometimes we have no rain for three months on end, nevertheless they thrive well.

The Pepper plant referred to by Mr. Dicks is known in Roumania as Ardei Gras, but this is not the hot variety, which is also a native food here, and practically an every-day dish, served up in many ways. In the restaurants they are chiefly used as follows: Take out the centre (which is full of seeds), stuff the fruits with sausage-meat and bake in the oven. This is an excellent dish, and when once "taken up" in England there is no doubt it will be used extensively, and Peppers will become almost as popular as Tomatos. The Peppers are grown in the same way as the Egg Plants they need plenty of feeding, water, and heat. When the fruits first appear on the market they are very expensive. I hope to send you a few notes on vegetables which are not used during the winter in England. *J. W. Funge, Head Gardener to H. H. Prince G. V. Bibesco, Palatul Mogosoea, Jud Ilfov, Roumania.*

FORCING LILAC.

In reference to the statement by Mr. J. A. Paice in *The Gardeners' Chronicle*, December 6, 1924, p. 385, regarding the forcing of Lilacs, allow me to point out that, in order to obtain white trusses, it is not necessary to force harder than for the coloured sorts, nor to cover the forcing pit with matting and such-like material. The variety Marie Legraye has blooms that are perfectly white, and this Lilac forces so easily, even at Christmas, that it is quite unnecessary to force Lilac or rose-coloured varieties if white blooms are required. *E. Matzner, Lubeck.*

FLORISTS' FLOWERS.

NEW PERPETUAL-FLOWERING CARNATIONS.

The British Carnation Society has recently registered the following new varieties of Perpetual-flowering Carnations:—

Gwladys Berry, a seedling of crimson-clove colour and with fair fragrance; the habit is short and bushy, and the variety is especially suitable for bedding. Messrs. Stuart Low and Co., Bush Hill Park.

Lady Hindlip, a seedling variety, the flowers white, striped with red, and possessing sweet fragrance. The habit is sturdy and free-flowering. Messrs. Stuart Low and Co., Bush Hill Park.

Viscountess Hambleden, a seedling (Benora × Aviator). The colour is rich Apricot-red, striped and flushed with red; the bloom possesses a distinct fragrance. The flower stem is stiff and the plant a free grower. Mr. W. Turner, Greenlands, Henley-on-Thames.

Marchioness of Salisbury, a seedling (Enchantress Supreme × Britannia). A superb pink variety with good fragrance and long stiff stems. The plant is a vigorous grower. Mr. R. H. Hall, gardener to the Marquis of Salisbury, Hatfield, Herts.

Dainty, a seedling. The flowers have an orange ground, speckled with salmon-pink. Mr. C. Engelmann, Saffron Walden.

Janet, a seedling of cerise colour and with fair fragrance. The flower stem is good; the plant a dwarf grower. Mr. C. Engelmann, Saffron Walden.

FRUIT REGISTER.

THE BEST EARLY APPLE?

There are some who might affirm that there is no "best" early Apple, and most pomologists would admit that the very earliest Apples are of poor quality in every respect compared to many of those that follow later.

Of the very earliest Apples, one or two are available in late July, including White Transparent and Mr. Gladstone, although in Kent and other Southern counties, Irish Peach follows very closely, if not ripening contemporaneously with Mr. Gladstone. Beauty of Bath is also on the market at nearly the same time. Of these very early Apples, the best is undoubtedly Beauty of Bath, which is now very largely grown for market purposes, but it has a great fault of the fruit dropping suddenly so that much of the crop is often damaged, to obviate which the market growers straw the ground underneath the trees.

Apart from Beauty of Bath I would as soon eat a well-ripened fruit of Keswick Codlin as any of the others I have mentioned; indeed, Keswick Codlin, when grown in Kent and other early districts in the south, makes a very nice eating Apple in early August for those who do not dislike a fruit that is crisp and a little sharp in flavour; I should certainly regard it as one of the dual purpose varieties.

Of the other early Apples, Lady Sudeley if picked and eaten direct from the tree, is very agreeable and juicy, with a fair flavour, but after the fruits have been gathered a little time they become woolly and deteriorate. Of Maidstone Favourite I have had no experience, but the raisers, Messrs. G. Bunyard and Co., speak well of it as an early autumn Apple. Red Joaneting, which in some parts of Kent is known as "Jennington," is an early variety of the Quarrenden type and a very old Apple, dating, according to Bunyard, from the seventeenth century. Like most of these early Apples, however, its quality is only moderate.

In my opinion, Langley Pippin is the finest of all these early varieties for flavour and its good quality is probably due to one of its parents being Cox's Orange Pippin, and the other Mr. Gladstone.

To get a really good early Apple, however, one must wait until St. Everard (Fig. 18) is ripe. This is another of the Cox's Orange Pippin crosses, the other parent being Margil. The flesh of this variety is very juicy, yellow, crisp, and of excellent flavour. The merits of this Apple are becoming widely known, and this is reflected by the large demands on nurserymen for this excellent early variety. Mr. E. A. Bunyard, in *A Handbook of Fruits*, states that St. Everard should be included in all collections, and I would especially recommend it to those with small gardens, for it succeeds admirably as a cordon tree, and its cropping is very regular. There is, however, room for a still earlier Apple of good quality to take the place of such sorts as Mr. Gladstone and Irish Peach at a time when fruit is in demand by holiday makers at the seaside.—*Seasider.*

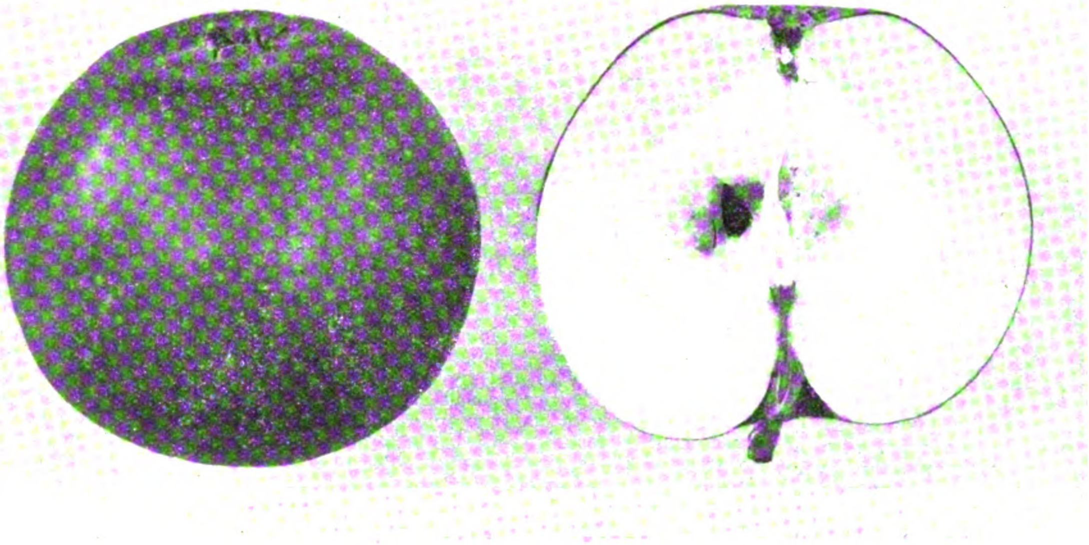

FIG. 18.—APPLE ST. EVERARD.

MARKET FRUIT GARDEN.

The heavy rainfall of December (5·36 inches) brought the total for 1924 up to 37·40 inches, which is 7·43 inches above the average for the previous ten years. This makes it the wettest year of which I have any record; and my figures go back to 1901. The only other year which exceeded 37 inches was 1903; and next to that came 1923 with 36·71 inches. We have now had two very wet years in succession, and both have been poor orchard fruit seasons in my district, seasons in which the management of a fruit farm has been a difficult business. I enter upon 1925 with high hope of better fortune. Two poor crops in succession are unusual, and three would be altogether exceptional. Unlike many growers, I had not even a good show of bloom in 1924, which makes it all the more likely that my trees will at any rate flower well this year. We surely must have touched bottom with regard to weather conditions.

Results and Seasons.

Now that the returns for 1924 have been dealt with, I find that it was not quite such a bad season as the previous one. Apples did rather better in respect to both quantity and quality. Dessert varieties, such as Beauty of Bath and Cox's Orange Pippin, which are often my best money-makers, were again very short indeed, but some of the cooking varieties did well, notably Bramley's Seedling. The quality was better than in 1923, because of the exceptional freedom from insect pests, and the rather more successful control of scab, due to earlier spraying.

Plums were very disappointing, several varieties giving practically no crop at all, and hardly any bloom. Black Currants cropped very well, but I had not a large area of bearing age. In two or three years these should be a much bigger item. Cobnuts were a bright feature, probably a record crop.

In my opinion the great lesson of the past two seasons is the paramount importance of efficient control of pests and diseases. The promise of satisfactory crops in 1923 was ruined by the exceptionally severe attack of aphis and brown rot; and the trees had not sufficiently recovered to give a good account of themselves in 1924. Thus the crops of two years were lost through insufficient control of pests and diseases in 1923. In the few instances where growers did manage to suppress their enemies in the former year, fair crops were secured during the past season, this being particularly noticeable in the case of Plums. Greater efficiency in spraying will have to be secured by the thorough study of materials to use and the times of application. Spraying is the most unpopular and expensive operation on a fruit farm, but it is second to none in importance.

Egg-killing Washes.

In my last notes mention was made of the possibility of killing insect eggs by winter or delayed dormant spraying with a combination of lime-sulphur and calcium caseinate, which is also, of course, excellent as a fungicide and cleanser. But readers were warned against placing too much reliance on the egg-killing effect. Unfortunately this warning turns out to be only too necessary. I have now heard from the Long Ashton Research Station that, on further trial, this has proved very unreliable. One year the wash appeared to give excellent results, and the next year it failed. This is typical of the difficulty of research work in fruit-growing. It does not mean, of course, that there is any reason to give up lime-sulphur as a winter wash. It will also still be worth while to add calcium caseinate, which costs little. This will help the wash to spread and wet thoroughly; and there is just the chance that it may enable it to kill insect eggs. To make certain of dealing with eggs, however, we must use instead one of the new tar distillate or carbolineum washes, which are undoubtedly successful.

Filling Gaps.

On a fruit farm of any age filling gaps amongst the trees becomes an important job every winter. Most gaps occur in plantations of Plums, because a good many trees have to be grubbed every season on account of silver-leaf. There appears to be no danger of infecting young trees planted on the same sites. In directions for filling gaps in orchards it is generally advised that the new tree should not be planted on the exact spot from which an old one has been grubbed. This is good advice, because the newly-planted tree is often slow to grow away when placed in soil that has been drained of plant food by the old tree. Unfortunately it is seldom possible to avoid planting on the same spot. To do otherwise, even if there were room, would upset the arrangement of the plantation. The only thing is to make the best of a bad job, and give the young tree as good a chance as possible. A wide hole should be dug out, the subsoil broken up with a fork, and plenty of farmyard or stable manure used. A good plan is to cover the roots with a little soil first, then apply the manure over a fairly wide area, and cover it with the rest of the soil. A barrow load of manure may be used to a tree with advantage. So treated the new tree will generally grow away fairly well, if it is not neglected during the growing season. It stands the worst chance in a grass orchard. A space clear of turf must be left round each young tree, of course, but this soon grows over unless it is regularly hoed during the summer, a job which is apt to be forgotten.

Gaps occur also amongst bush fruits, and represent a considerable loss unless annually filled. I have used two thousand Black Currants for this purpose this winter, mostly to fill gaps caused by grubbing reverted bushes. In this case it is the subsequent pruning that is likely to get neglected,

Overcrowded Orchards.

The chief fault in my older plantations, as in so many others, is too close planting. The trees are all twelve feet apart each way, and some varieties are becoming overcrowded, even where they are bush-shaped trees on supposed Paradise. Some grubbing has been done this winter to give more space, but it is not a very satisfactory job. If the trees had been planted on the square it would be an easy matter to take out every other one; but this is not possible where they have been angled, as in my case. All I can do is to grub every other row; but this still leaves the trees only twelve feet apart in the rows. The twenty-four feet alleys between the rows look very bare at present, but the branches will no doubt come down and stretch out into the space before long.

One is always reluctant to grub trees, but it pays well to give more space where it is wanted. I recently saw a plantation in which alternate rows had been grubbed some years ago, and every other tree in the remaining rows; and I was told that the return per acre had steadily increased in spite of the great reduction in the number of trees.

Apple Lady Sudeley.

One row that has been grubbed was of Lady Sudeley, the only row of this variety on the place. It will not be missed. Some people consider this to be the best mid-season dessert Apple, and it is certainly of good flavour as grown in some districts. Moreover, its appearance is attractive when it does not come too large, and it is very suitable for marketing in single-layer trays or Peach boxes. With me, however, it is not a good Apple so far as quality is concerned. It often crops very heavily, and never misses a year altogether, but the fruit grows very large and is of very "woolly" consistency. It is fairly commonly known that there are two distinct types of Lady Sudeley, one having arisen as a bud sport from the other. The true form is very distinctly and beautifully striped when ripe; the other tends to be larger and is mostly yellow when ripe, with only a little faint striping on the exposed side. There were both types in my row, the almost worthless yellow one predominating. The trees had been in for twenty-four years and had grown to an enormous size, particularly those bearing the yellow fruit, though all were of bush form and supposed to be on Paradise.

Are Manures Needed?

From the New York Experiment Station comes a report on some trials which were started twenty-five years ago to answer the question—Is it necessary to fertilise an Apple orchard? The trees were planted twenty-eight years ago, and from their third year they have received annual dressings of various manures. Two plots have had stable manure every year, others superphosphate alone, superphosphate and muriate of potash, and complete fertilisers consisting of nitrate of soda, dried blood, superphosphate, and muriate of potash. Control plots receiving no treatment were also included. The plantation has been under clean culture up till the end of July each year, when a non-leguminous cover crop was sown for ploughing in during the winter. The answer to the question which prompted the experiment is that, in the average western New York Apple orchard that is well cultivated, properly drained, and sufficiently supplied with organic matter by means of a cover crop, manures are not required. No influence from any of the manures, or only such trifling variations as must be put down to chance, could be traced in growth of tree, size or yield of fruit, colour of foliage or quality, keeping properties, or colour of fruit.

There is no reason to doubt the reliability of the experiment. Similar negative results have been secured in others. It would, however, be very unwise to consider the results as applicable to orchards in this country without taking into account the difference in conditions. The American trees are on some very vigorous stock, and are planted forty feet apart each way. At this wide spacing it can easily be imagined that the roots would not have explored all the available soil in twenty-eight years. Each year they would push out a litttle further into fresh soil. There is a wide difference in an English orchard of bush-shaped trees on dwarfing stock planted twelve feet apart each way. In much less than twenty-eight years the whole of the ground would have become a mass of roots, and practically all the soil would have been explored. Moreover, we do not grow cover crops.

Whilst there need be little surprise that the trees in this experiment did not benefit from the manures, since the control trees continued to grow and crop normally, showing that no help was required, it is extraordinary that none of the manures showed any influence at all. One would expect the annual dressings of stable manure or fertiliser containing nitrate of soda, starting when the trees had been planted only three years, would have resulted in rank growth and retarded bearing.

The experimenters do not attempt to apply their results to conditions other than those obtaining in cultivated orchards in New York State. They recognise that other experiments indicate that fertilisers are of value on thin or worn-out land, or in orchard trees that are making weak growth. Also that, "if grass orchards were considered in this connection it would be apparent at once that there is hardly a single exception to the general rule that grass orchards respond markedly to nitrogenous fertilisers."

It is probably a safe rule for orchards in this country, as in America, that manure is not needed so long as the trees are cropping well and making a certain amount of growth. But so soon as the trees cease to do this, or show signs of "going back," they certainly do respond to manures, though many growers consider that, even then, organic manures alone are of any use. Every gardener must have seen direct results from the application of farmyard or stable manure, and many growers in recent years have improved their trees by manuring them through the agency of pigs or poultry. With regard to mineral fertilisers, negative results are perhaps more common than not; but I am by no means satisfied that they do not give results in certain circumstances. *Market Grower.*

VEGETABLE GARDEN.

HERBS.

The herb garden and its associations, the medicinal border and the scented plant garden are amongst the most charming and interesting features of any garden.

English cooking does not make the demands on herbs that French cooking does, consequently French gardeners give more space and attention to the cultivation of herbs, but if the demand for many of the lesser known herbs is not so great in England as on the continent, it is worth while to set aside a garden entirely for these plants for their charm alone.

In choosing a site for the herb garden the essentials are full exposure to sunshine and a free circulation of air. A position facing south-east or south-west, not enclosed by tall trees but sheltered with a low hedge, is ideal. Any good garden soil suits most herbs, though, naturally, the same soil will not suit all equally well. Some are naturally rock or mountain plants and do not mind how dry the soil is, others, like the members of the Mint family, love moisture; one or two, including Rue and Fennel thrive in poor soils, while others demand rich soil. No doubt the old superstition that some plants are antipathetic to others originated in the fact that the soil which suited the one was unsuited to the other, Rue will not thrive near Basil, it was believed, but Rue and the Fig-tree are in league. Dill, Coriander, Mallows and Chervil love to be together, while Radish and Hyssop refuse to have anything to do with each other. Yet, frequently, in spite of the likes and dislikes of the plants, the gardener has, perforce, to grow different families side by side, and it is wonderful how, with a little management, difficulties may be overcome.

The site having been chosen, the preparation of the ground is practically the same as for any other class of plants. The size, shape, laying-out and planting of the herb garden will depend on the taste of the owner, but whatever the shape of the piece of ground, a charming effect may be produced on the following lines. A comparatively narrow border, which may be as little as a foot wide in a small garden or two feet to three feet wide in a large garden, may be arranged on the outside-edge. If the garden is a rectangular one the corners may be rounded off on the inside, thus increasing the width of the border at these points and making them suitable for larger-growing plants. The border should be edged with tiles and a path two feet wide made with tiles laid on edge to finish off two inches lower than those which edge the border. The central part of the garden may be laid out in groups of small beds to contain single varieties of herbs and the necessary connecting paths to the outside made in the same way. Broken tiles will do quite well provided one edge is good, and they should be laid not too closely together and with the soil packed firmly between them so that the smaller Thymes and Mints may be encouraged to partially cover them and help to hold them together.

Whether planting should be done in autumn or spring depends somewhat on circumstances. Losses often occur during severe winters after autumn and particularly late autumn planting, but on the whole I strongly advocate autumn planting for the hardy kinds. If strong plants are well planted in early autumn they become established quickly and seldom succumb even to severe winters. This is an age of enclosed gardens, and if the site chosen is not already an enclosed one, a hedge of Golden Cupressus or Retinospora adds to the beauty of the herb garden.

Many of the most useful kitchen herbs are raised from seeds, and they include annuals and biennials. I will take the annuals first, and begin with the more tender ones. In their native country several of these plants would be perennial but because they are killed by frost in our winters we have to treat them as annuals.

The tender annuals include Sweet Marjoram, Origanum Marjorana; Sweet Basil, Ocymum Basilicum; Bush Basil, Ocymum minimum; and Summer Savoury, Satureia hortensis; also the less familiar Purslanes. The tender annuals well repay the trouble of sowing the seeds in gentle warmth in the beginning of April, growing them on in cool conditions and finally planting them out at the end of May. In very warm gardens on light soils most of these will succeed if sown outside where they are to remain, about the end of April. If this practice is followed, thinning should take place immediately the plants are large enough to handle or serious checks will ensue. Sweet Basil needs a rich soil and Sweet Marjoram a sandy one. A rich, light soil suits Summer Savoury, while the Purslanes need a little more watering than most other herbs, and of the two Purslanes, the green one is a little hardier than the golden one. Sweet Marjoram is one of the most delightful of kitchen herbs and was much beloved by our forefathers, so much so that in earlier times to be called the "Sweet Marjoram of the Salad" was the highest compliment that could be given one. Summer Savoury is in great request for stuffings for many meat dishes, and makes for wholesomeness as well as pleasantness. It may be used also for boiling with Peas, for Pea-soup, and for garnishing dishes, like Chervil and Parsley. The thick stems of the Purslanes are liked by many in salads, and of old they were credited with the power of curing a vast number of diseases.

The hardy pot-herbs raised from seed give no trouble except that of sowing often enough to keep up a succession. Two of these, Chervil and Parsley, should always be at hand to pick from both in summer and winter. Chervil is one of our most fascinating herbs, yet comparatively little grown in English gardens, though in France it is as commonly grown as Parsley and is a welcome change from that herb. Why this should be it is difficult to state, as Chervil is quite as hardy and even easier to grow than Parsley, the flavour is much milder and the young leaves are excellent in soups and salads, while for garnishing it is more artistic than the heavier foliaged Parsley. Should successional crops be required, the seeds may be sown any time between March and October. August and September seedlings may be used the same winter and all the protection the plants need is a reed-hurdle or box-frame during the severest part of the winter. *W. Auton.*

(To be concluded.)

AN ONION CALENDAR.

The Onion is so important a vegetable in the kitchen that a strenuous endeavour should be made by the gardener to have bulbs available for use so far as possible throughout the year. This may best be done by adopting a policy of successive sowings and plantings.

For those who have the necessary space and convenience I would suggest the following method, which I will put into diary form, it being distinctly understood that the dates are only given as approximate. The actual dates of sowing and planting should be governed by the district, the weather, the condition of the soil, and the requirements of the establishment.

During January sow seeds of a variety of the Ailsa Craig type in a heated greenhouse, with a view to planting the seedlings out in April.

At the first favourable opportunity in February plant out seedling Onions raised from seed sown outside during the preceding August. These are intended to form fairly large Onions in July and August. Plant also at about the same time some Shallots, also some Potato Onions, which are relished in some households.

Early in March make the main sowing of Onions out-of-doors. For this purpose select varieties which are noted for their long-keeping qualities. This sowing should provide Onions of medium size. To ensure having Onions of all sizes, the plot of spring-sown Onions may be divided into three parts. The plants in one part should be thinned to about six inches apart, to provide Onions next in size to those which are raised under glass. Another portion of the bed may be left entirely unthinned to produce small Onions for pickling, and those hard Onions, pushing each other out of the ground, are best for keeping for a long time. The third portion may be merely thinned as there is a need for the green Onions for salad.

During April the plants raised under glass in January will be fit for setting out on deeply tilled and liberally manured soil, the endeavour being in this case to produce monster Onions which will be found useful for culinary as well as for exhibition purposes.

Should there be a demand for pickling Onions, which is not likely to be met by a selection of the small Onions from the outside sowing of March, a further sowing expressly for pickling may be made late in April or early in May. For this sowing poor soil should be chosen, and the seeds should be sown thickly and the seedlings left unthinned, so as to ensure small, hard and well ripened Onions. The Queen type is best for this sowing.

Towards the end of July seeds of the variety White Lisbon may be sown for the purpose of producing small green Onions in the early spring. As they are thinned for this purpose the others will become larger and will be found useful for pulling in an advanced green state during late spring and early summer. Sowing at this date would in many cases be too early for the provision of plants for setting out in February as there would be a greater tendency for the plants to run to seed. That is why I would advise a further sowing about the middle of August, which would be more dependable. The reason I advise the July sowing is to make sure of getting some green Onions for salad at as early a date as possible in the new year.

Where all these sowings and plantings are possible there should be no difficulty in having Onions in some form or another throughout the year, and there should be sufficient variety for all purposes. By sowing in the autumn and under glass in the new year, and also by including Shallots and Potato Onions, there is practically a guarantee that should there be trouble with the Onion fly, there will still be a sufficiency of Onions. *William F. Rowles.*

HOME CORRESPONDENCE.

Onion Cranston's Excelsior v. Ailsa Craig.—The friendly corrections in the issue of January 3, re Ailsa Craig, amounts to little. It does not matter whether bulbs were grown on Ailsa Craig or in the Marquis of Ailsa's garden so long as the Onion is recognised, and the honour of its introduction credited to the late Mr. John Cranston. Cranston's Excelsior and Ailsa Craig Onion seed are bracketed by some seedsmen, and as the price is the same this amounts to an acknowledgment that the names mean the same thing. The writer has grown the Onion under both names for years, and an experiment made with a view to finding any difference has failed. Under both names there is the same variation in shape. The mere fact of saving and harvesting Onion seed in Scotland does not create a new variety. *Pomona.*

Bees and Apple Fertilisation. In your issue of December 20, 1924, *W. T.* asks:—"Do bees assist in the fertilisation of Apples"? So far as my experience goes, they do not. Three years ago I took a swarm of bees and put them in the orchard, with a view to the fertilisation of Apples. In 1923 we had a beautiful lot of blooms and I was particularly careful to notice whether the bees worked amongst them. Although the bees were in the orchard I never saw one on any of the Apple trees. In 1924 the trees again bloomed well; they were, in fact, covered in flowers, but not a bee came near them. Not far from the orchard in question there is a wall covered with Pears. The latter bloomed well in 1924, and the trees were crowded with bees during flowering time, and we had a good set. This is proof that bees prefer Pear to Apple bloom Although we had had a fine lot of Apple bloom in the orchard during the last two years, it failed to set, and we had very few Apples, whereas in other years we usually gathered well over one hundred bushels of fruits. I hope to give the bees another trial in 1925 before I finally condemn them with regard to the fertilisation of Apples. *N. Molyneux, Rookesbury Park Gardens, Wickham, Hants.*

Brazil or Para Nuts.—The recent review (*Gard. Chron.*, December 27, 1924), seems to bear indication of U.S.A. rather than of local colouring; for instance, the State of Amazonas is called Amazonia; the forest knife or "Facào" becomes the Spanish machete. Perhaps some botanist would correct me, but I was always under the impression that the number of Nuts in a pod was eight, and not twelve to twenty-two; anyhow, a fine pod before me contains but eight as seen through the terminal hole, and agrees with my recollection of the number found in the few pods I opened locally. Is the tree (Bertholletia excelsa) really of exceptionally high growth? Is it not rather the effect of the struggle for light in the Amazonian forest (so different from the Malayan jungle); the only isolated trees I saw had become so from the removal of non-fruit bearing neighbours, leaving the "Castanha" tree in the form that they had made it acquire. Certainly, the isolated and perhaps cultivated ally, the Sapucaya, were of no great height. From a book on the State of Parà it would appear that the bark of the tree, not the substance of the pod, is used for oakum; I was told that the pod of the allied Sapucaya was used as a sort of filter, and the water or extract obtained had the reputation of being good for diabetes. There was great excitement amongst the brokers when the Nuts came "down river," and one would hear them discussing "crackings," one rejoicing in a seventy per cent., another deploring a fifty per cent., or some such figures, according to the good and bad ones in a casually-selected hundred from a lot bought "on spec." The Nuts were put on board the exporting steamer by handing up smallish baskets along a line of porters, and they had a regular chanty as each lot was passed up the line; it began "*Primeira! Primeira!*" (first); then, as number two went along, "*Não e primeira e secunda! Patrão!*", and so on, *terceira, quarta* with the corrective advance and invocation to the employer. In those days, now twenty-five years ago, there was no attempt to cultivate the tree: in places, these and other fruit trees (Avocados, Abricos, etc.) were left *in situ* and became "cultivated" when their neighbours were felled; an estate was valued according to the number of such or of rubber trees it contained. When in the Malay States not long afterwards, I said: "Why do you put all your eggs in the one basket of Parà rubber; you have already had a bitter experience with Coffee. If Parà rubber will grow here, why not try Parà or Brazil Nuts as well?" Or, again, seeing that then the native guttapercha was being decimated, and its product fetching twice the price of rubber: "Why not give attention to that in its native soil?" But there, I believe, the matter ended. *H. E. Durham.*

Big-bud in Currant and Nut Bushes.—The mites which cause big-bud in the Currant are distinct from those found in Nut-bushes. If found side by side this indicates rather that conditions favour their development than that the mites migrate from Currant to Nut or Nut to Currant. The buds should be removed and burnt, or the branches cut away; then dusting with lime and sulphur may be found effective. There are many other kinds of injurious mites besides these. *Hilderic Friend*

Young Gardeners of To-day.—With reference to the correspondence which has appeared in your columns on "Young Gardeners of To-day," I am sure that many head gardeners are wondering half sadly what will become of many young men who are working under them. The head gardener, no matter how proficient he himself is in his work, can contribute but a fraction towards the training and building-up of young gardeners so that they are possessed of self-discipline and wide vision. Success, as in any other profession, is obtained by the young man's own efforts. *J. Kneller, Penhryn Castle Gardens, Bangor.*

Apple Cox's Orange Pippin.——The defoliation of this Apple, referred to by Mr. G. Carpenter (p. 13), was, I believe, entirely due to the wet, sunless season. It has occurred with me during the past two years, and crops have been light and the fruits small and rough. This variety is evidently more tender than most, and cannot endure unfavourable conditions. It seems to do best in a hot, dry season. In the year of severe drought, 1921, Cox's Orange Pippin produced enormous fruits and looked very happy. *Market Grower.*

SOCIETIES.

ROYAL HORTICULTURAL.

January 13.—The first meeting of the year was held in Vincent Square on the above date, and the occasion was favoured by a fogless day, although the attendance of visitors was rather poor. There were some very striking exhibits of Orchids and Carnations, and rock garden displays were prominent amongst the floral groups. There was an exceedingly choice exhibit of vegetables, and a unique collection of Citrus fruits gathered from the gardens of La Mortola, Ventimigila, Italy, which attracted considerable attention.

Orchid Committee.

Present: Messrs. Frederick J. Hanbury (in the chair), Gurney Wilson (Hon. Sec.), C. J. Lucas, J. Wilson Porter, E. R. Ashton, J. C. Cowan, A. McBean, W. H. Smith, T. Armstrong, J. E. Shill, John Cypher, Fred K. Sander, Charles H. Curtis, S. W. Flory, A. Dye, E. F. Moore, W. T. Pitt, C. Cookson, and Stuart Low.

First-Class Certificate.

Cypripedium Gwen Hannen var. Field Marshal (Florence Spencer × Christopher var. Grand Duke Nicholas). A large flower of the C. Chrystopher type. The huge dorsal sepal is mostly white, but on the green base and central area there are purple and rose-purple spots. The petals hang forward so much that they spoil the form of the flower; they and the lip are Apple-green, the former having a brown central line. Shown by G. F. Moore, Esq.

Awards of Merit.

Cypripedium Stamperland var. Alpha (Glorita × Christopher var. Grand Duke Nicholas). This is one of the very big-flowered Cypripediums; it has a huge dorsal sepal, white, with green centre and brownish-purple spots; the wide-spread petals are pale green, with a pinkish tinge, and the lip is of somewhat similar colouring. Shown by R. Paterson, Esq., Cathcart, Glasgow.

Cypripedium Worsleyi (Hestia × Lady Dillon). A very fine, bold hybrid, with wide, rounded dorsal sepal which has a white ground, a small green base, and an abundance of glistening deep purple spots and dots, the markings being largest over the central area. The petals and lip are green, shaded with brown, and there is a deeper medium band on the former. Shown by H. Worsley, Esq., Stonehouse, Haslingden.

Laelio-Cattleya Pepita var. splendens (L.-C. St. Gothard × L.-C. Colmaniana). A handsome hybrid showing ample evidence of the St. Gothard parent. The broad petals and the sepals are purplish-rose, and the big, frilled lip, is intense purple, with pale margin and old gold markings in the throat. Shown by Messrs. Cowan and Co.

Cypripedium Mrs. Eley var. Derrick (Christopher var. Grand Duke Nicholas × Commodore). – A finely formed flower with broad, rounded, flat, dorsal sepal, white, with green base, and soft purple spottings; the petals and lip are green, the former marked with brown. Shown by G. F. Moore, Esq.

Groups.

A magnificent group of Cypripediums was arranged by G. F. Moore, Esq. (gr. Mr. Page); every plant was finely grown and large numbers of the hybrids were raised at Chardwar, Bourton-on-the-Water. Mr. Moore has obtained extraordinary development in the dorsal sepal of his hybrids, and this is particularly noticeable in C. Mrs. Eley var. Derrick, C. Chrysostum and its varieties, and C. Gwen Hannen in many fine varieties. Other capital sorts were C. Memoria H. J. Elwes, C. Christopherson, C. The Great Mogul, with beautiful bronze tinting; and C. Akbar, with heavy purple-brown markings on the petals and lip. It was a beautiful group of grand flowers and was well worthy of the Gold Medal awarded.

A capital group was exhibited by Messrs. J. Cypher and Sons, and it consisted chiefly of finely grown Cypripediums with half-a-dozen long, arching spikes of Calanthe Bella. Among the Cypripediums, C. Queen of Italy, C. Ballet Girl, and C. Nydia were conspicuously good (Silver Banksian Medal).

H. T. Pitt, Esq. (gr. Mr. Thurgood) exhibited Odontoglossum Purple Emperor, with three grand flowers; this superb Odontoglossum was placed under a big bell-glass and proved a great attraction. In his well arranged group of Orchids, Mr. Pitt showed a goodly number of Cypripediums, the famous Miltonioda William Pitt, various Odontoglossums, Epidendrum Endresio-Wallisii, Odontonia Longowyi, some Cymbidiums, and a spike of the handsome Eulophiella Rolfei (Silver-Gilt Banksian Medal).

Several pretty Cypripediums were shown by Messrs. Flory and Black, and the most attractive was C. Golden Wren var. Fairy, which gleams finely under sunlight. A beautiful specimen of Odontioda Coligne var. Red Start, with glowing red, whitish-margined flowers of large size, was exhibited by H. Bolton, Esq. (gr, Mr. Lyne), Claygate Lodge, Claygate. H. Worsley Esq., Stonehouse, Haslingden, Lancs., also exhibited Cypripediums and secured an award for C. Worsleyi.

Messrs. J. and A. McBean contributed a few plants, including one of their fine strain of white Odontoglossum crispum and one of Odontonia Ceres, with six widely-expanded, white and brown flowers. A fine specimen of Cypripedium Leeanum var. Clinkaberryanum, shown by Mr, Harry Dixon, Wandsworth Common, carried sixteen fine flowers, and won a Cultural Certificate.

Messrs. Cowan and Co.'s exhibit included capital examples of Cattleya Douai, Brasso-Cattleya British Queen, Laelio-Cattleya Pepita, L.-C. Hassallii alba, Odontoglossum crispum xanthotes, Oncidium spendidum, and a good set of Cypripediums (Silver Banksian Medal).

Messrs. Sanders' exhibit consisted of a few Cypripediums, Cymbidiums, and Calanthes. Cypripedium insigne var. Pavlova is a beautiful form, with light, clear yellow colouring save for the white margin and apex to the dorsal sepal.

Floral Committee.

Section A.—*Present*: Messrs. H. B. May (in the Chair), J. F. McLeod, Arthur Turner, H. J. Jones, J. M. Bridgeford, Wm. Howe, J. B. Riding, Donald Allan, E. R. Janes, D. Ingamells, F. Streeter, F. G. Cousins, W. B. Gingell, D. B. Crane, and W. D. Cartwright (Secretary).

Section B.—*Present*: Messrs. W. J. Bean (in the Chair), J. Hudson, E. H. Wilding, W. B. Cranfield, F. G. Preston, Reginald Cory, T. Hay, Clarence Elliott, G. Yeld, E. A. Bowles, R. C. Notcutt, and G. W. Loder.

First-Class Certificate.

Crocus chrysanthus Snow Bunting.—A very charming form of this variable species with large flowers which, when fully opened, are delightful to behold. The inner surface of the perianth segments is a rich, creamy-yellow colour with a satiny lustre, and the base is marked with a well-defined zone of orange-yellow. The outer surface is marked and feathered with purplish-slate lines which converge in a brownish-slate coloured blotch. The anthers are brownish-yellow and the stigmata bright, orange-scarlet. Shown by E. A. Bowles, Esq., Myddleton House, Waltham Cross.

Awards of Merit.

Pycnostachys Dawei.—A well-known winter-flowering greenhouse plant which was first flowered at Kew in 1906 from seeds collected the previous year by Mr. M. T. Dawe in the Uganda districts or Mabira and South Buddu. Although the specimens exhibited had been grown near to London they had evidently escaped injury from the dense fogs which have been experienced of late, and this fact alone, apart from the beauty of the plant, should recommend it for more extensive cultivation in and around industrial centres. The labiate flowers are a very striking shade of blue and are borne in a compact head, crowned with a hairy cone of unopened flowers, the sheaths of which have a reddish-bronze tone. The growth is loosely branched and reaches a height of about four feet. Shown by Messrs. L. R. Russell, Ltd., Richmond.

Primula malacoides Courtland's Seedling.—A very vigorous form comparatively free from farina on the flower scapes, and outstanding on account of the strength of growth and large size of the individual flowers. The colour is a clear, lilac-pink; the petals are deeply bifid. Shown by P. W. Carver, Esq., West Hoathley, Sussex.

GROUPS.

In a corner of the hall Messrs. L. R. Russell, Ltd., showed a miscellaneous collection of greenhouse plants, the centre of the display being occupied with the blue Pycnostachys Dawei. Other interesting flowering plants were Strelitzia Reginae, Habrothamnus elegans, and Acacia platyptera, together with foliage subjects in variety. (Silver Banksian Medal.) Mr. J. W. Forsyth brought a fine collection of Cyclamens, and included among the many varieties were magnificent specimens of Giant White Wonder, the flowers of which are exceedingly large, pure white, and beautifully formed. There were also numbers of frilled varieties in white, salmon, and Rose-pink colours, one of the prettiest being Lady Helen Cassel, of a distinct shade of silvery Rose-pink, flushed with mauve around the "eye." (Silver Banksian Medal.)

Carnations were exhibited in fine condition by Messrs. Stuart, Low and Co., the newer varieties being represented by Mauve Queen, a Lilac-pink variety of good form; Lady Hindslip, richly-flaked, with white ground pencilled with scarlet; and Sheila Greer, deep Apricot and salmon-scarlet. The same firm also showed a collection of Cyclamens, and Hippeastrums with Camellias employed as a background. (Silver Banksian Medal.)

Messrs. Allwood Bros. contributed a magnificent display of Carnations, prominence being given to Laddie, Master Michael Stoop, a rich, cerise variety of large size and firm texture; Maine Sunshine, yellow; White Pearl; Beauty of Durham, rich, salmon-cerise; and Butterfly, a strangely mottled flower of wine colour and white. (Silver-Gilt Banksian Medal.) In the collection of Carnations staged by Mr. C. Engelmann, Janet, glowing cerise; Mrs. Walter Hemus, salmon-pink; and Red Laddie, a deep Rose-scarlet sport from Laddie, were the principal varieties. (Bronze Banksian Medal.)

Messrs. James Carter and Co. had a very bright group of Iris tingitana arranged in baskets and bowls. (Bronze Banksian Medal.) Mr. Elisha J. Hicks exhibited forced Roses of exceptional quality for the time of year. A few of the best flowers were of Chas. E. Shea, pink; Premier, deep Rose; Joanna Bridge, Apricot; and Coral Cluster, a dainty, salmon-pink Polyanthus variety. (Bronze Banksian Medal.)

There were a number of groups of hardy flowers suitable for rock garden displays, and the most comprehensive exhibit was staged by Messrs. Waterer, Sons, and Crisp, Ltd. Crocus Sieberi was represented by a large drift of flowers, while other heralds of the spring were Narcissus minor and N. triandrus albus, Iris sind-per, two pretty, violet-coloured varieties of I. persind named Ruby and Harbinger, I. alata, Galanthus Elwesii, and Adonis amurensis (Silver Banksian Medal). Mr. G. Reuthe showed freely flowered branches of Rhododendron mucronulatum, Ericas in variety, and Alpines in pots. (Bronze Banksian Medal).

In the display from Messrs. J. Cheal and Sons, Ltd., were Sternbergia lutea, Iris reticulata, Primula Wanda, and the silver foliaged Helichrysum rosmarinifolium, which contrasted well with the bronze leaves of Shortia galacifolia. There were also a number of dwarf Conifers arranged about the group (Bronze Banksian Medal).

Just inside the entrance Messrs. Wm. Cutbush and Son, Ltd., had a low-lying rock garden, planted with masses of Helleborus niger, Crocus Sieberi, Iris reticulata, and other spring-flowering plants. Amongst the shrubs was a heavily fruited specimen of Cotoneaster horizontalis and a group of the white-flowered Andromeda polifolia (Silver Banksian Medal).

One of the most interesting displays from an educational stand-point was an exhibit of dried leaves of Rhododendrons, representing and arranged according to their sections, and mounted so as to show the beauty of the veinings and tomentum of the undersides of the leaves. This exhibit was the work of Miss Betty and Master Charles McLaren, Bodney, aged thirteen and eleven years respectively, who were deservedly awarded a Silver Banksian Medal, in addition to receiving the congratulations of the members of the Floral Committee (section B).

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix (chairman), J. Cheal, W. Poupart, P. C. M. Veitch, H. S. Rivers, G. F. Tinley, S. B. Dicks, W. F. Giles, A. Metcalfe, A. Bullock, H. Prince, E. Neal, E. Laxton W. H. Divers, F. G. Treseder, E. A. Bunyard, A. N. Rawes, H. V. Taylor and W. G. Lobjoit.

The chairman referred to the great loss the Committee had sustained in the death of Mr. W. Bates, who was one of the oldest members; general regret was expressed by the members present at the loss of such an old and valued colleague, and it was resolved to send a message of condolence to his family from the Committee.

Mr. E. Beckett showed the Venetian variegated Chicory, a variety with a considerable amount of colouring in the foliage; it is said to make a very pretty feature in salads. Mr. S. B. Dicks stated that this particular Chicory was well known and in general cultivation.

Several varieties of Oranges sent from Mr. Hanbury's gardens at La Mortola, Ventimiglia, Italy, by Mr. Braggins, the gardener, were sampled, but none was of any special merit, the best being Citrus nobilis sanguinea. The fruits formed part of a large collection of Citrus species and varieties from La Mortola, for which a Silver-Gilt Hogg Medal was awarded. The exhibit was intended for the meeting on December 16, but, owing to the Christmas traffic, the fruits were delayed and did not reach the Hall until the 17th ult., consequently they were not nearly so attractive as they would have been in a fresher condition, for each one was gathered and sent with stalks and foliage, but these had dropped during the time they had been stored. Some, such as Citrus nobilis sanguinea, were very small fruits, and others, such as C. decumana, Pampelmous dolce, were as big as Mangelwurzels.

Messrs. Sutton and Sons staged a very excellent exhibit of vegetables, including most of the kinds available at this season, in all 125 dishes. There were exceptionally fine Leeks of the Acquisition variety, enormous Onions of the Ailsa Craig type; some smaller, but excellent quality bulbs of Al Onion; large Parsnips of Tender and True and Student varieties; perfectly shaped roots of Scarlet Intermediate, Matchless, and Early Gem Carrots; round Beet of The Globe variety, and long Beet of the Pineapple sort; Christmas Drumhead Cabbage, a nice selection of Potatos, Brussels Sprouts, Scorzonera, Mustard and Cress, Shallots, Garlic, Italian Corn Salad, and many others (Gold Medal).

Messrs. G. Bunyard and Co., Ltd., were awarded a Silver-gilt Hogg Medal for a collection of Apples and one or two dishes of Pears. This also was a very noteworthy exhibit, especially for a January show. Amongst the varieties that appeared in best condition were Belle de Boskoop, Brownlees' Russet, Cox's Orange Pippin, a wonderful colour; Stark, Wagener, Striped Beefing, Winter Queening, Claygate Pearmain, Emperor Alexandra, Norman's Pippin, Christmas Pearmain, Newton Wonder, Barnack Beauty, Gascoyne's Scarlet, Chas. Ross and Ribston Pippin. The Pears included fine dishes of Easter Beurré and another of Glou Morceau.

NEWCASTLE HORTICULTURAL.

In an address entitled, "The position of Potatos to-day," which was recently delivered before the members of this Society, Mr. C. W. Mayhew, Horticultural Adviser to the Northumberland County Council, stated that the present high prices of seed-sets were partly due to the fact that in 1922, when there was a very satisfactory crop, the prices for ware Potatos were exceptionally low, so low, in fact, that acreages had been decreased owing to the poor returns. The years 1923 and 1924 were by no means good ones for the crop, and a combination of causes had brought about the high prices which were being asked for seed-sets this year. The speaker was of the opinion that home-grown seed should be used for this coming season, as Northumberland and Durham produced seed-sets of excellent vitality.

Mr. Mayhew also referred to the trials of Potatos conducted at Cockle Park, where it had been found that maincrop varieties planted in February and March gave a heavier yield than when set in April or May.

Amongst the exhibits there was a good display of Apples, staged by Mr. J. B. Mercer, Maidstone, Kent, while of flowers the specimen of Begonia Gloire de Lorraine gained a special prize for Mr. S. Smelling, Undercliffe Gardens, Sunderland.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, January 9.—Committee present: D. Losh Thorpe, Esq. (in the chair), Messrs. A. Burns, A. Coningsby, J. Cypher, G. Giles, A. Keeling, E. W. Thompson, and H. Arthur (Secretary).

FIRST-CLASS CERTIFICATES.

Cypripedium Worsleyi (*Hestia* × *Lady Dillon*).—A large, well-formed flower with a dorsal sepal three-and-a-half inches across with a green base, spotted with purple, and with a broad, white margin; the broad petals are lined brown and spotted. *Cypripedium Kethar* (*Nireana* × *R. Ashworth*).—A variety with a white dorsal sepal three-and-a-quarter inches across; the base is green, delicately spotted with brown, and there is a brown line down the centre; the bronzy-yellow petals have also a line down the centre. From H. Worsley, Esq.

Cypripedium The Admiral (*parentage unknown*).—A well-shaped flower heavily spotted with reddish-brown and having a green base. From S. Gratrix, Esq.

Odontoglossum Phyllis Giles (*Franz Masereel* × *angustum*).—A heavily blotched flower with a white margin; the large, flat lip has a maroon blotch. From A. Hanmer, Esq.

Cattleya White Empress (*Trianæ Broomhill variety* × *Irene*.—A variety with pure white sepals and petals; the large round white lip has an orange coloured throat. From P. Smith, Esq.

Cypripedium Chloris (*Lord Wolmer* × *Mrs. H. Jenkinson*).—A well set flower, the dorsal sepal being delicately spotted, with pink; the pouch is reddish-brown and the petals of the same shade is marked with brown pin spots. From A. J. Keeling and Sons.

Awards of Merit.

Cypripedium The God Pan (*Hermes* × *Satyr*); *C. The God Pan var. Bacchante*; *C. The God Pan var. Excelsior*; *C. The God Pan var. Silenus* and *C. The God Pan var. Pipes of Pan.* From Mrs. Bruce and Miss Wrigley.

Cypripedium Victoria (*Comorin* × *Victor Hugo*) and *C. Irishi* (*Vandyke* × *Peter Pan*). From Mrs. Gratrix.

Cypripedium Stamperland (*Glorita* × *Christopher*).—From S. Gratrix, Esq.

Cypripedium Minotaur var. Bonita (*nitens Leeanum var. Becktoniæ* × *Euryades var. Rex.* From Capt. W. Horridge.

Odontoglossum amabile mag., Haddon House variety. From P. Smith, Esq.

Oncidium varicosum Birchenallii. From Mr. J. Birchenall.

Groups.

S. Gratrix, Esq., West Point, staged a group to which a Silver-gilt medal was awarded.

A large Silver Medal was awarded to Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns), for a group.

Large Silver Medals were also awarded to A. Hanmer, Esq., Buxton (gr. G. Giles) and Messrs. J. Cypher and Sons, Cheltenham, for miscellaneous groups of Orchids.

Obituary.

William Bates.—We deeply regret to learn of the death of Mr. William Bates, of Cross Deep, Twickenham. He died on Saturday, January 10, having reached the advanced age of seventy-five years. Many years have passed since Mr. Bates was gardener at Cross Deep, a private establishment then famous in the horticultural world. Amongst other things, he was distinguished as a cultivator and exhibitor of Chrysanthemums. Eventually, Mr. Bates took over the Cross Deep gardens and convertad them into a market garden, where he continued to carry on business until the last. One of the founders of the Royal Gardeners' Orphan Fund, Mr. Bates probably held the record for attendance at meetings of the Executive Committee; indeed, he took a great interest in this charity from its beginning until the end of his days. For fifty-two years Mr. Bates resided at Twickenham, and for twenty-five years was a member of the Twickenham District Council, and on the occasion of his retirement he was presented with a large, framed portrait of himself as an appreciation of the public spirit he had always shown. Mr. Bates' knowledge of fruits and vegetables was a wide one, and, because of this, he held a seat on the Fruit and Vegetable Committee of the Royal Horticultural Society over a very long period of years. The funeral took place on Thursday, January 15th, at the Parish Church, Twickenham.

John Fortune.—We much regret to announce the death of Mr. John Fortune at his home, 41, Belgrave Terrace, Aberdeen, in the 78th year of his age. Born at Blair-Adam, Kinross-shire, where his father was for many years gardener, the deceased adopted his father's profession, and served his apprenticeship at Blair-Adam. Thereafter he occupied important posts in several leading gardens in England and Scotland, finally taking up the duties of gardener at Denmore, Aberdeenshire, the erstwhile home of one of Aberdeen's cotton manufacturers—an industry, alas, now defunct. Mr. Fortune retired from thence a number of years ago, his health, unfortunately, giving way. Of a quiet and unobtrusive nature, he was kindly and sociable in his dealings with his fellow-men.

His advice in professional matters was much sought after and freely given. The deceased was the nephew of the celebrated Robert Fortune, who for many years was plant collector for the Royal Horticultural Society. Mr. John Fortune possessed many of the characteristics of his famous uncle, but, unfortunately, the innate modesty and unostentatious disposition of the man obscured much of his work. The funeral took place at Springbank Cemetery, Aberdeen, on Wednesday, the 7th inst. Mr. Fortune, who was predeceased by his wife a few years ago, is survived by two daughters.

ANSWERS TO CORRESPONDENTS.

Names of Plants: *A. B. H.* Viburnum sempervirens. *A. B. S.* Jasminum grandiflorum. *H. G. R.* 1, Scirpus lacustris variegatus; 2, Liriope striata; 3, Asplenium Nidus-avis; 4, Phlebodium aureum; 5, not recognised, send in flower; 6, we do not undertake to name Roses; 7, Andromeda floribunda; 8, Phlomis fruticosa; 9, Choisya ternata; 10, Polypodium Mayenianum. *C. R. F. T.* 4, Aloe verrucosa; *P. M.* (a) Chinkerichee, Ornithogalum lacteum; (b) probably Helichrysum grandiflorum; *Mrs. W.*, Ornithogalum lacteum; *C. G. D.*, Smilax aspera.

Names of Fruits: *E. K.* 1, Lady's Finger of Lancaster; 2, Golden Reinette; 3, decayed; 4, Winter Greening; 5, Bramley's Seedling; 6, Golden Noble. *S. E. A., Yorks.* 7, Marie Benoist; 10 and 21, Winter Nelis; 11, Red Doyenné (syn. Doyenné Gris); 12, Soldat Laboureur; 13, Bergamot Esperen; 14, Colombia; 15 and 16, Doyenné du Comice; 17, Josephine de Malines; 18, Huyshe's Prince Consort; 19, Délices d'Angers; 20, William Victoria. *W. B.* 1, Mére de Ménage; 2, Wormsley Pippin; 3, Fearn's Pippin.

Rock Plants Easily Raised From Seeds: *E. F. C.* The following rock plants are hardy and would give a good variety of comparatively showy flowers for your hot, dry position. Should any show signs of suffering from the drought you should place a few stones about them: Acantholimon glumaceum; Achillea argentea; Aethionema grandiflora; Alyssum saxatile compactum; Anthemis cupaniana; Aubrietias, any; Campanula portenschlagiana; Cheiranthus alpinus; Crucianella (Phuopsis) stylosa; Dianthus caesius; D. graniticus; Dryas octopetala (give lime); Erodium cheilanthifolium; E. Manescavii; Geranium argenteum; G. cinereum; G. grandiflorum; Gypsophila repens; Helianthemums, any; Helichrysum bellidioides; Linum alpinum; L. flavum; Nepeta Mussinii; Onosma tauricum; Oxalis rosea; Saponaria ocymoides; Aizoon or Silver Saxifrages, any of which seed is procurable; Sedum rupestre; S. spectabile; S. Ewersii; S. kamtschaticum; S. lydium; Silene Schafta. Mixed packets of seeds of Aubrietia and Helianthemum would suit well for your purpose. If you care for a Rose Arabis, A. albida rosea may be raised from seeds, which are obtainable.

Tax on Garden Boys and Labourers: *H. T. P.* Under the Revenue Act, 1869, a licence of fifteen shillings has to be paid for every male servant employed wholly or partially as a gardener or under-gardener or in any other capacity involving the duties of either of such servants by whatever style the person acting in such capacity may be called. Assuming, therefore, that the gardens are domestic and not used wholly for trade purposes, it would seem that a licence is required for the garden boy. If the other two employees referred to are employed merely in the capacity of labourers and do not do the work of under-gardeners, it would appear that they are exempt, but the question really turns on the exact nature of their employment.

Communications Received.—A. W. P.—Nancunlon—E. W.—G. E. D.—C. H. D.—D. S. A.—R. G.—R. B.—H. W. S.—E. H. A.

TRADE NOTE.

WARRANTS OF APPOINTMENT.

The list of tradesmen for 1925 who hold Warrants of Appointment to His Majesty King George V. from the Keeper of the Privy Purse, with authority to use the Royal Arms, include the following:—

Messrs. Barnards, Ltd., Gates and Fence Makers, Norwich; Messrs. Joseph Bentley, Ltd., Horticultural Chemicals, Hull; Messrs. Boulton and Paul, Ltd., Manufacturers of Wire Sheep Netting, Norwich; Messrs. James Carter and Co., Seedsmen, London; Messrs. Clibrans, Nurserymen, Altrincham; Messrs. W. Cutbush and Son, Ltd., Nurserymen, Barnet; Messrs. Dickson and Robinson, Seedsmen, Manchester; Messrs. Dickson, Brown and Tait, Seedsmen, Manchester; Messrs. Dicksons and Co., Nurserymen and Seedsmen, Edinburgh; Messrs. Dicksons, Ltd., Nurserymen, Chester; Messrs. Dobbie and Co., Ltd., Seedsmen, Edinburgh; Messrs. Fell and Co. (Hexham), Ltd., Seedsmen and Nurserymen, Hexham; Messrs. J. Fison and Co., Ltd., Chemical Fertilisers, Ipswich; Messrs. J. Forbes (Hawick), Ltd., Nurserymen, Hawick; Messrs. Gee and Sons, Seedsmen, Biggleswade; Messrs. T. Green and Son, Ltd., Horticultural Machine Makers, London; Messrs. Hogg and Robertson, Ltd., Seedsmen, Dublin; Messrs. T. Jannock, Nurserymen, Dersingham; Messrs. Johnson Bros. and Co., Ltd., Iron Fencing Manufacturers, Walsall; Messrs. J. K. King and Sons, Ltd., Seedsmen, Coggeshall; Messrs. Laing and Mather, Seedsmen, Kelso-on-Tweed; Messrs. Little and Ballantyne, Seedsmen, Carlisle; Messrs Mackenzie and Moncur, Ltd., Hothouse Builders, Edinburgh; Messrs. W. Paul and Son, Rose Growers, Waltham Cross; Messrs. Ransomes, Sims and Jefferies, Agricultural Machinery Makers, Ipswich; Messrs. R. Sankey and Son, Ltd., Horticultural Pottery Makers, Nottingham; Messrs. H. Scott and Sons, Horticultural Chemical Manufacturers, London; Messrs. A. Shanks and Son, Ltd., Lawn Mower Manufacturers, London; Messrs. Sutton & Sons, Seedsmen, Reading; Messrs. Toogood and Sons, Ltd., Seedsmen, Southampton; Mr. C. Turner, Nurseryman, Slough; Messrs. E. Webb and Sons (Stourbridge), Ltd., Seedsmen, Stourbridge; and Messrs. W. Wood and Son, Horticultural Specialists, London.

GARDENING APPOINTMENT.

Mr. Walter Bradley, for the past six months Gardener to D. Simpson, Esq., Tuesley Court, Godalming, and previously fifteen years Gardener to H. C. B. Underdown, Esq., Buckenham Tofts Park, Mundford, Norfolk, as Gardener to Capt. Walter Stewart Savile, Ven, Milborne Port, Somerset.

CATALOGUES RECEIVED.

Seeds.

Austin and McAslan, 89, Mitchell Street, Glasgow.
Harrison and Sons, Leicester (Wholesale).
Sampsons, Ltd., 8, Portland Street, Kilmarnock.
Leighton's 36, Renfield Street, Glasgow.
W. Drummond and Sons, Ltd., 57, Dawson Street, Dublin.
Daniels Bros., Ltd., Norwich.
Kent and Brydon, Ltd., Darlington.
Charles Sharpe and Co., Sleaford (Wholesale)
Stuart and Mein, Kelso, Scotland.

MARKETS.

COVENT GARDEN, Tuesday, January 13, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0-18 0
—elegans	10 0-12 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Cacti, per tray, —12's, 15's	5 0- 7 0
Crotons, per doz.	30 0-45 0
Cyclamen—	
—32's	36 0-48 0
—48's	24 0-30 0

	s. d. s. d.
Cyrtomium	10 0-15 0
Erica melanthera, 48's, per doz.	21 0-30 0
— —60's, per doz.	8 0-10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0- 4 0
Marguerites, white, 48's, per doz.	18 0-30 0
Nephrolepis, in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large 60's	5 0- 6 0
—small	4 0- 5 0
—72's, per tray of 15's	2 6- 3 6

Cut Flowers, etc.. Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	15 0-18 0
—cuneatum, per doz. bun.	12 0-15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0- 3 0
med. sprays	1 6- 2 6
short ,,	0 9- 1 3
—Sprengeri, per bun.	
long sprays	1 6- 2 0
medium ,,	1 0- 1 6
short ,,	0 4- 1 0
Bouvardia, white, per doz. bun	12 0-15 0
Camellias, White, per box	3 0- 4 0
Carnations, per doz. blooms	3 0- 5 0
Croton leaves, var., doz. leaves	0 9- 2 6
Daffodils, per bunch—	
—Double Daffodils	1 6- 2 0
—Golden Spur	1 6- 2 0
—Soliel d'Or	0 9- 1 6
Fern, French, per doz. bun.	0 9- 1 3
Freesia, per doz. bun.	4 0-18 0
Galax, American, green and bronze, per doz. bun.	— 3 0
French Flowers—	
Carnations, per bun	1 6- 2 0
Marigolds, per pad	7 0-10 0
Mimosa, per pad	6 0- 8 0
—per bun.	1 0- 1 3
Narcissus, Paper White per pad	24 0-36 0
—doz. bun.	7 0- 9 0
Rananculus, double scarlet, doz bun.	18 0-24 0
—Carmine, per doz. bun	8 0-12 0

	s. d. s. d.
Roses, Safrano per bun. of two doz. blooms	3 0- 3 6
—per pad	8 0-10 0
—Ulrich Brunner, per doz. blooms	6 0-10 0
Violets, Parma, per bun.	6 0- 7 0
—single, per pad	8 0-12 0
Lilac, Dutch, per spikes	4 0- 8 0
Lilium lancifolium album, per doz. blooms	4 0- 5 0
—rubrum, long, per doz. blooms	4 0- 5 0
—short ,, ,,	1 6- 2 6
Lilium longiflorum long, per doz.	12 0-14 0
short ,, ,,	10 0-12 0
Lily of the Valley, per doz. bun.	24 0-36 0
Orchids, per doz.	
—Cattleyas	24 0-30 0
—Cypripediums	5 0- 7 0
Prunus triloba (Dutch), per bun.	1 0- 1 6
Richardias (Arums) per doz.	9 0-12 0
Roses, new crop, per doz. blooms, Richmond	4 0-18 0
Ruscus, French, per bun.	1 0- 2 0
Smilax, per doz. trails	2 0- 3 0
Tulips, per bunch—	
—Couronne d'Or	2 0- 3 6
—La Reine	2 0- 2 6
—Mon Tresor	2 0- 3 0
—Prince of Austria	2 0- 2 6
—Rosina	2 0- 2 6
—Thomas Moore	2 0- 3 0
—Wm. Copland	3 0- 5 0
Violets, per doz. bun	2 0- 8 0

REMARKS.—There is little alteration in prices of flowers this week. Forced Daffodils, of which Golden Spur is the chief line, are arriving in large quantities and the price is slightly easier. Scilly Soliel d'Or is also selling well and the quality is fairly good. Forced Tulips remain about the same price and are sufficient to meet the demand. Freesias are also arriving in increasing quantities. Of French flowers Mimosa is plentiful and of first-class quality; Paper White Narcissus is nearing the end of the season and high prices have been paid for the best quality. There is a scarcity of flowering pot plants; a comparatively new subject in this class is Saintpaulia ionantha, some excellent specimens of which have sold at good prices.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	— —
—Best	3 6- 5 0
—Others	2 6- 3 0
—Madeira, per box	5 0- 6 0
Beets, per cwt.	4 6- 5 0
Cabbage, per tally	6 0-10 0
Canary Island Tomatos	6 0-20 0
Cauliflowers, per doz.	3 0- 4 0
Forced Mint, per doz.	6 0-10 0
Celery, best, washed, per bundle	— 2 6
—Second	0 8- 0 9
Chicory, per lb.	0 5- 0 6
Carrots, per cwt.	3 6- 5 0
Cucumbers, each	2 6- 4 6
Dutch Onions	8 6- 9 6
Endive, per doz.	3 0- 4 0
English Asparagus—	
—Finest	8 0-10 0
—Best	5 0- 6 0
—Batavia	3 0- 4 0
French Asparagus—	
Paris Green	10 0-11 0
Lauris	12 0-15 0

	s. d. s. d.
Greens, per bag	1 0- 2 0
Horseradish, per bundle	2 0- 2 6
Leeks, per doz. bundles	2 6- 3 6
Lettuce, per dozen	1 6- 2 0
—Outdoor	3 0- 4 0
Mushrooms, cups	2 0- 2 6
—boilers	1 6- 2 0
Onions, Valencia, per case	10 0-10 6
Parsnips, per cwt.	3 6- 4 0
Potatos, Canary Island, per case	12 0-14 0
Potatos, per ton—	
—Dunbars	230 0-240 0
—King Edward	210 0-240 0
—Whites	90 0-200 0
—New Guernsey	1 3- 1 6
Rhubarb, Forced, per doz.	1 6- 2 0
Savoys, per tally	7 6-12 6
Seakale, per punnet	2 6- 3 0
Spinach, per bushel	— —
Sprouts, per bushel	2 6- 3 6
Sweet Potatos	2 6- 3 0
Turnips, per cwt.	4 0- 5 6

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Oregon Newtown	13 0-16 0
—Newton Wonder	6 0-10 0
—Bramley's Seedling	8 0-12 0
—Californian Newtown	11 0-12 6
—Delicious	11 0-13 0
—Winesap	10 0-11 0
—Nova Scotia—	
—Stark	16 0-24 0
—Ben Davis	20 0-22 0
—Russett	25 0-30 0
—Baldwin	22 0-26 0
—Greening	24 0-35 0
Bananas, singles	17 0-25 0
—doubles	17 0-27 6
Californian Pears—	
—Winter Nelis, per case	30 0-32 6

	s. d. s. d.
Grapes—	
—Gros Colmar	2 3- 4 0
—Belgian Colmar, per lb.	2 0- 2 6
—Almeria, per barrel	20 0-26 0
Grape Fruit, Cuban	16 0-20 0
—Bahamas	— 16 0
—Florida	16 0-25 0
Jaffa Oranges	15 0-16 0
Kent Cobs, per lb.	1 0- 1 2
Lemons, Messina, per box	8 0-10 0
—Murcia	12 0-13 0
Oranges, Spanish—	
—300's	15 0-30 0
—360's	14 0-18 0
—504's	14 0-20 0
Pines	3 0- 5 0
South African Peaches	8 0-12 0
—Apricots	4 0- 5 0
—Plums	5 0- 8 0
Tunis Dates, per doz.	3 6- 5 0

REMARKS.—Trade fairly good but supplies heavy. Oranges, and imported Apples are abundant. Forced vegetables are becoming more important and meet a fair demand.

GLASGOW.

While business in the flower department has quietened down considerably in the New Year, the turnover in fruit continues good. Oranges experienced a slow sale, but Apples were in good demand at moderate prices. A sale of 10,000 cases of Hood River fruit, consisting principally of the varieties Winesap, Rome Beauty, Grime's, Ortley, and Newtown Pippins, was announced for Friday, but the bulk of the consignment had previously been disposed of and drawn from the quay. Prices were as follows:—Newtown, 14/- per case; Winesap, 13/-; Ortleys, 12/- to 13/-; Rome Beauty, 11/- to 12/-. Other varieties—Starks, 30/- per barrel; Baldwin, 32/-; Newtown Pippin, 34/-; Winter Greening, 32/- to 34/-; Wagner, 23/- to 25/-; York Imperial, 22/- to 26/-; Jonathans, 10/6 to 12/6 per case; Grime's Golden, 10/- to 12/-, and Northern Spy, 11/- to 13/6. First arrivals of bitter Oranges sold at 18/- for Seville, and 14/- for Malaga. Sunkist Oranges made 30/- to 34/- per case; Valencia (504), 13/- to 15/-; (300), 12/6 to 14/-, and (360 and 240), 12/6 to 15/-; Lemons (300), brought 12/- to 15/- and Grape Fruit 18/- to 22/- for Jamaica brands and 16/6 to 21/- for Bahama fruit. South African Plums and Apricots made 4/- per box and Canary Bananas, 20/- to 30/-; Grapes maintained previous quotations, Gros Colmars being 2/6 to 3/6 per lb. and Muscats, 3/- to 5/-.

Owing to the scarcity of Onions prices have advanced from 3/- to 4/- per case within the past fortnight, while consignments of Dutch Brown averaged 10/6 per bag. Salads were in limited demand at the following prices:—French Lettuce, 1/2 to 2/3 per doz.; Radish, 2/- to 2/6; Endive, 3/- to 4/6; Mustard and Cress, 2/6, and Water-Cress, 1/- per doz. Seakale brought from 8/- to 10/- per box of 6 lbs.

In the cut flower market, supplies of Chrysanthemums were restricted in view of the end of the season. Special blooms of Heston White and Winter Cheer averaged 2/6 for 6's, while other qualities ranged from 1/- to 2/-. Tulips, on the other hand, are becoming more plentiful, but the stems of most varieties are short. William Copland sold at 1/6 to 2/- for 6's; Thomas Moore, 10d. to 1/2; Rosina and Prince of Austria, 1/6 to 1/9; Mon. Tressor, 1/3 to 1/6, and 2/-; Vermilion Brilliant, 1/3 to 1/9; Carnations fluctuated between 3/6 and 5/- per dozen; Dutch Lilac made 4/- to 6/-; Mimosa, 7/- to 9/- per pad, and Narcissus, 6/- to 7/- per doz; white, pink, and blue Hyacinths averaged 10d. to 1/5 for special blooms and 6d. to 1/- for inferior. The first Daffodils of the season arrived during the week and English grown Golden Spur brought 2/3 per bunch, while Scotch supplies averaged from 1/6 to 1/10.

THE WEATHER.

THIS was one of the mildest Decembers on record at Southport, very humid and equable, with but light southerly winds generally. The rainfall was rather heavy, but the days were sunnier than usual, the wet hours being from 4 a.m. to 10 a.m. The evenings were almost always dry. The mean temperature of the air was so high as 45.6°, or 5.9° above a fifty years' local average for the month. There were forty-six sunny hours, or ten more than the normal number. Rain, however, fell on twenty days (one more than usual); and the total quantity was 4.38 inches, an excess above the fifty years' average of 1.18 inches. Towards the close of the month, the ground water level rose decidedly above its normal height. Not a single "ground-frost" was recorded—a truly remarkable result. Only one gale was experienced, and during its prevalence the month and year expired. There was no snow, and only two days yielded fog. Slight thunder occurred twice.

[1924.]

The outstanding feature of the past year has been a record prevalence of southerly winds. There was, therefore, much cloud, little sunshine, light breezes, equality of temperature with general mildness, and a surplus of four inches of rain. But there have been much wetter and duller years during the Observatory's history. *John Baxendell, Borough Meteorologist, Southport.*

ENQUIRY.

A correspondent desires information on the cultivation of Watercress under glass in order to obtain supplies in the winter.

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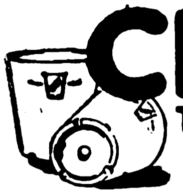

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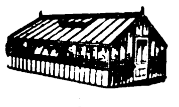

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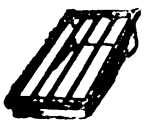

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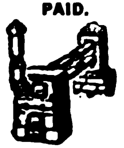

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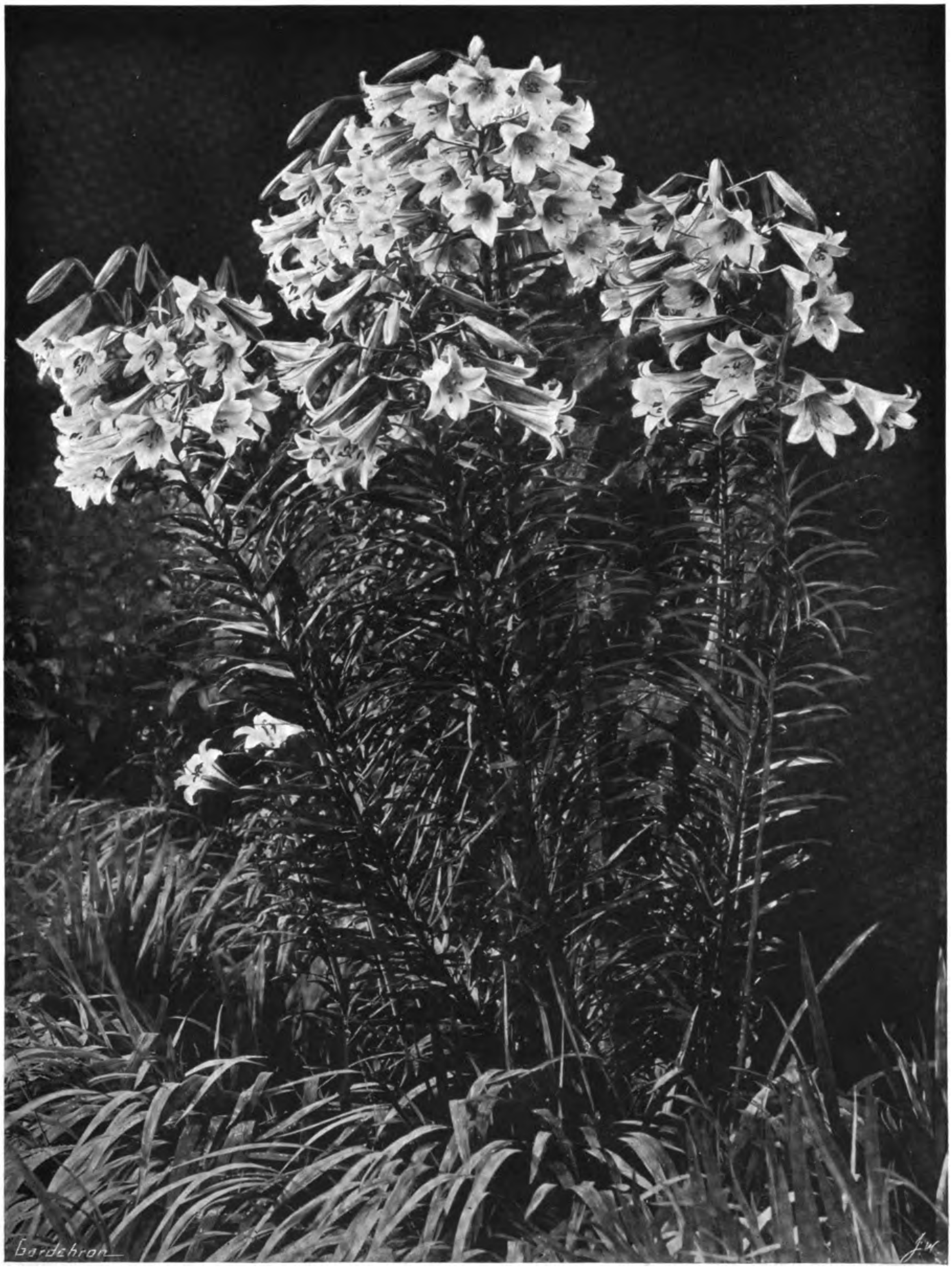
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LILIUM CENTIFOLIUM

THE Gardeners' Chronicle

No. 1987—SATURDAY, JANUARY 24, 1925.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 39·4.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, January 21, 10 a.m.: Bar. 30·5, temp. 49°. Weather, Fine.

Sulphur as a Fertilizer.

THE question whether applications of sulphur to soil have any decidedly beneficial effect on crop production is one which is well worthy of careful investigation. The evidence provided by experiments which have hitherto been made is not conclusive; but that may be due to inexperience of the quantities which should be used and the conditions under which sulphur may act favourably on soil fertility. It is, of course, well-known that sulphur is, no less than nitrogen, an ingredient of the proteins which constitute the basis of the living bodies of plants. Wherefore it might be supposed that just as additions of nitrogenous manure to the soil exert a favourable influence on plant growth, so might the addition of sulphur. A soil rich in organic matter would presumably contain enough soluble sulphur compounds for the needs of crops, but even so the analogy with nitrogen might also hold good. Even a soil rich in nitrogen compounds is apt to be benefited by the addition of soluble nitrogenous fertilizers, for the simple reason that the total quantity of nitrates present in the soil at any given time is rarely more than enough to meet the requirements of one crop. The fact that sulphur, if added to the soil, is likely to be added in soluble form, should not matter since it is now known that this element, like nitrogen, undergoes a regular cycle of change in nature. Sulphur in the soil is acted on by sulphur-bacteria of different kinds, and is oxidised to sulphuric acid, which combines with bases in the soil to form sulphates, of which those that are soluble in the soil-solution are available for use by plants. Wastage of sulphur compounds no less than wastage of nitrogen compounds goes on in the soil. Micro-organisms may reduce soil sulphates and liberate the sulphur in the form of sulphuretted hydrogen. In such a year as the present, when many soils are waterlogged, this processs may go on as the smell of decayed plants testifies even in ordinarily good garden soil. Whether the loss of sulphur by these means leads to a serious depreciation of soil-sulphur cannot be affirmed. It may do. On the whole, however, it would seem probable that in good garden soil, constantly enriched by the decayed remains of plants, and by manures, no lack of sulphur compounds occurs. Nevertheless it would be interesting if those who have access to cheap supplies of sulphur would try the experiment of digging in light dressings and report on the results. It remains to note that with the production of sulphuric acid from sulphur, soil-acidity will arise and that that may be beneficial for such crops as the Potato, which are less affected by disease (Potato scab) when the soil in which they grow has an acid reaction.

Mr. A. E. Lowe.—We regret to learn from two sources of the serious illness of Mr. A. E. Lowe of New Zealand, and a letter from Sir R. Heaton Rhodes, his employer, gives small hope of his recovery. A portrait of Mr. Lowe, whose name is a household word amongst Daffodil lovers, appeared in the *Daffodil Year Book* for 1914. In an extract from a letter by Sir Heaton Rhodes, before us, Sir Heaton states: "He has been with me for nearly thirty years and I have, with full confidence that I could trust him and in the knowledge of his ability, left the whole management of my garden and plantations, which are extensive, to him. He will be a great loss to the horticultural world, and I am grieved, not only on that account, but also because of my liking for the man, that I shall not have him much longer. With the exception of Mr. Tannock, Curator of the Dunedin Gardens, I do not know his equal in this country, and I know full well that I shall have the greatest difficulty in replacing him."

Iris Society's Bulletin.—The Iris Society was the outcome of the visit of Mr. J. C. Wister, President of the American Iris Society, M. S. Mottet, and other continental visitors to this country in May, 1922, when, it will be remembered, visits were paid by them to certain firms that specialise in Irises, including Messrs. R. Wallace and Co., Tunbridge Wells (see *Gard. Chron.*, June 17, 1922, p. 314) and Mr. Amos Perry, Enfield. Mr. Wallace suggested the idea of instituting a British Iris Society, and on October 4 of that year the Iris Society came into being. At the meetings of the Society many interesting papers on the Iris have been read and now, for the first time, the Society has published a *Bulletin** The President for 1924 is Mr. G. P. Baker, Bexley, Kent, and the Secretary is Mr. G. N. Bunyard, 25, Bower Mount, Maidstone. The objects of the Society, as set forth in the constitution and rules are "to encourage, improve, and extend the cultivation of Irises and to regulate their nomenclature." All the articles in the *Bulletin* are by well-known men in the Iris world. The introduction is by Mr. W. R. Dykes, who draws attention to the fact that there are other Irises than Bearded Irises, and that there are among them beautiful garden plants that are in danger of being neglected. Mr. Dykes refers to a number of these and gives short details as to their cultivation. Sir Arthur F. Hort, Bart., contributes a very useful paper on the cultivation of tall Bearded Irises, and the other three papers are also concerned with Bearded Irises. Mr. G. Yeld, like Sir Arthur Hort, deals with the cultivation of these Irises under the title "How to grow Bearded Irises." Mr. Baker writes from a long experience with this type of Iris and gives much that is interesting horticulturally concerning these beautiful flowers. Mr. Pilkington's article entitled "The cultivation of the tall Bearded Irises," includes some observations regarding soil and its effect on the growth and health of the plants, and he also deals with the disease known as rhizome rot. He concludes that the plants are more susceptible to this disease when they continue growing late in a mild autumn and enter the winter in a sappy condition, with subsequent frosting of the foliage in the spring.

"Geo. Monro, Ltd." Concert.—The twenty-sixth annual Bohemian Concert, held under the auspices of the "Geo. Monro, Ltd.," Concert Committee, will take place at the Queen's Hall, Langham Place, W.1., on Thursday, February 12th. The doors will open at 7 p.m., and the concert is fixed to commence at 7.30 p.m. The programme contains the names of many famous artistes and the band of His Majesty's Grenadier Guards will render a selection of music under the direction of Lieut. G. Miller, L.R.A.M. The proceeds of the concert are devoted to hospital funds and trade charities. Tickets may be obtained from Mr. G. Coleman, Hon. Secretary, 4, Tavistock Street, W.C.2.

The Narcissus Eelworm Disease in America.—While, of course, it is not surprising to learn that the eelworm, Tylenchus, has made its appearance on Narcissi in America, it is nevertheless interesting to note that what we believe to be the first American paper on this subject has recently been published in *Phytopathology*,* the official organ of the American Phytopathological Society. The author of the paper, Mr. C. E. Scott, gives a brief review of the symptoms of the disease, and retains the older name Tylenchus dipsaci Kuhn, for the name of the pest. Originally Kuhn, in 1858, named the eelworm Anguillula dipsaci, but as he found the pest attacked a number of different plants and was not restricted in its attacks solely to the Teasel, he himself changed the name to Anguillula devastatrix. In 1860 Bastian made the new genus Tylenchus, and amongst its members he placed Tylenchus devastatrix, a name, following the rules of nomenclature, which should hold good. It is disappointing to find that no record is given as to the first appearance of the disease in America, although it has been found in stock "that has been propagated in California for twelve years as well as in bulbs growing there in their first season from Holland, on clean land." The disease apparently is giving as much concern to American growers as it has done in the past to cultivators in this country and in Holland, and while we see no reference to the work on the control of the pest, which has been conducted so long ago as 1917, when the hot water treatment was undergoing a commercial test at Spalding from results of experiments conducted at Wisley in 1916 by Mr. J. K. Ramsbottom, it is interesting to read that "treatment of bulbs in hot water at 110 F. for three hours is the most promising method. Tests are being made to determine the period during which this treatment will be most effective, and will result in the minimum injury to the bulb."

---

* The Iris Society. *Bulletin* No. 1. Edited by W. R. Dykes.

* *Phytopathology*, November, 1924.

Rennes Chrysanthemum Congress.—At the Annual Congress of the French Chrysanthemum Society, held at Rennes in November last, our old correspondent, Mr. C. Harman Payne, was awarded a Diploma of Honour for his paper on "Sports and the Raisers Rights of Priority concerning the Distribution of them." It is hoped that an English translation of Mr. C. Harman Payne's paper will be published at an early date.

Legacies to Gardeners.—The late Mrs. Harriet Campbell, Christleton Hall, Christleton, Cheshire, who died on September 10, left a sum of £100 to her gardener, Mr. H. Large, and £50 to her former gardener, Mr. J. Ryder.

A new Disease of Silver Firs in Scotland.—In the *Transactions* of the Royal Scottish Arboricultural Society (Vol. XXXVIII., part 2), Mr. Malcolm Wilson and Mr. James Macdonald, B.Sc., contribute a paper on a new disease of Silver Firs, caused by the fungus Rehmiellopsis bohemica, which appears to be spreading rapidly throughout the southern and western parts of Scotland. So widespread is the trouble that the cultivation of Abies pectinata is being discontinued. Unfortunately, the disease is not restricted to one species of Abies, but has been recorded as attacking A. nobilis, A. Pinsapo, A. Pindrow, and A. cephalonica, and the first symptoms of infection are the reddening of the current year's leaves, which rapidly shrivel, and afterwards turn dark brown or grey-black. In cases of severe infection the shoots remain thin and almost always die during the course of the summer. The cause of the death of the branch is somewhat doubtful, for both in A. pectinata and A. nobilis sections of the wood taken below the region bearing diseased leaves show yellowing of the cortical tissue, but no fungal hyphae are present. It is suggested that some toxic substance is excreted by the hyphae which brings about the death of the cells before they are actually reached by the fungus. The infection of Rehmiellopsis is frequently accompanied by infections with Chermes, especially in plantations of A. pectinata.

Messrs. Sutton and Sons' Employees' Pension Fund.—In June, 1921, Messrs. Sutton and Sons, Reading, instituted a pension fund on behalf of their employees, and to this fund they are themselves the largest contributors. Towards the close of the past year the members gathered in the Abbey Hall, Reading, to receive a report of the proceedings in connection with this fund, and they were gratified to learn that the amount standing to the credit of the fund was £24,833—a very fine result. The annual contributions amount to just over £8,000, of which about £5,000 is contributed by Messrs. Sutton and Sons. Sums paid out in donations during the year 1924 amounted to about £900, but, naturally, liabilities will steadily increase as more and more of the old employees retire as they reach the age of fifty-six years. Mr. Leonard Sutton, who presided over the meeting, congratulated the members on the very favourable state of affairs shown by the balance sheet, as presented by Mr. A. H. Salmon. The capital sum of the pension fund is vested in trustees: Messrs. H. C. Dryland, A. G. West and A. H. Salmon, who represent Messrs. Sutton and Sons, and Messrs. Giles, F. W. Carter and Willis, who represent the employees. At the conclusion of the Pension Fund business, Mr. W. T. Churchill reported that in connection with the Hospital Fund the employees of Messrs. Sutton and Sons had contributed about £219 to the Royal Public Hospital during the past year, and they were thus entitled to special advantages in case of accident or severe illness. This idea of a Pension Fund should command the attention of many other business firms, as it appears to be an excellent one in every way, advantageous to the firm, desirable in the case of the employees, and of mutual advantage by combining employer and employed in a common interest.

Mr. Henry H. Smith, F.L.S.—The managing director of Messrs. Charlesworth and Co., Haywards Heath, commenced his horticultural career with Messrs. W. Balchin and Sons, Hassocks Nurseries, Brighton, at a time when this firm annually delighted thousands of visitors at the Temple Show with their exhibits of Leschenaultia biloba major. Few Orchids were grown at the Hassocks Nurseries, but these were sufficient to excite the interest of the budding horticulturist who, after spending two years at Hassocks and one year in the floral department of Messrs. W. Miles and Co., of Hove, entered the great Orchid establishment of Messrs. Sanders of St. Albans, where he was able to take up the study and cultivation of Orchids in serious fashion. It was about this time that Messrs. Sanders were importing immense quantities of Orchids and many new plants from all parts of the world, and the experience and knowledge Mr. Smith gained during his two years stay at St. Albans has proved extremely valuable to him. Seeking wider experience, he went to Messrs. J. Cowan and Co.'s nursery at Garston, where he became very concerned with the sale and commercial value of Orchids, and this side of the business proved to be of absorbing interest. From Garston he went to Bradford to become travelling representative of Messrs. Charlesworth and Co. This was in the year 1896, when the late Mr. Charlesworth had just begun to interest himself in the raising and hybridising of Orchids and commenced the career that eventually placed him in a foremost position amongst successful raisers of Orchids. Soon after Mr. Smith became associated with Mr. Charlesworth it was found that the modest nursery was entirely insufficient to accommodate the large batches of seedling Orchids which had been raised, consequently a new and larger establishment was secured about half-a-mile outside the city. In 1901, on the death of Mr. John Baguley, Mr. Smith was invited to take over the management of Mr. Charlesworth's nursery, while Mr. Charlesworth devoted his whole attention to the seedlings and hybridisation. A little later, a continental branch of the business was opened at Brussels, and a world-wide trade in Orchids began to develop. It was not long, however, before both Mr. Charlesworth and Mr. Smith agreed that Bradford was not an ideal spot, either climatically or geographically for the conduct of an extensive Orchid business, and they decided that a position south of London would best suit their purpose. Eventually the Haywards Heath property was acquired and a new, large, and up-to-date establishment planned. In the spring of 1908 they commenced to build, and so well did the building proceed, that by October the whole of the stock was transferred from Bradford. The next thing to claim the interest of Mr. Charlesworth and Mr. Smith was the report of M. Noel Bernard's experiments with fungi in the raising of seedling Orchids, which was followed by Prof. Burgeff's experiments and his publication thereon in 1911. After due consideration of this interesting subject, Mr. Smith paid a visit to the principal Orchid growers, amateur and commercial, in Germany with a view to discovering at first hand what succees Prof. Burgeff had made and whether his discovery was likely to appeal to Mr. Charlesworth as a practical and commercial proposition. Mr. Smith was satisfied that under suitable conditions the discovery would develop into a paying proposition, while Mr. Charlesworth, with his scientific inclinations, became deeply interested in the subject. The result was the building and equipment of a laboratory, and Mr. Charlesworth then commenced experiments which resulted in the development and commercialising of this new method of raising Orchids. As is well-known, immense success attended these efforts, and what is now known as Charlesworth's symbiotic pure culture method of raising seedlings has been an unqualified success, enabling the Haywards Heath firm to produce big stocks of seedlings in a way previously unattainable. The death of Mr. Charlesworth in 1920 came as a very sad blow to Mr. Smith. After carrying on the Haywards Heath business for Mr. Charlesworth's executors for two years, Mr. Smith invited five other members of the staff to join him in the formation of a private limited company which was registered in January, 1923. With their loyal assistance and co-operation, Mr. Smith is maintaining the standard of trading and high reputation so painstakingly built up from small beginnings by Mr. Charlesworth and himself. Mr. Smith is a member of the Royal Horticultural Society's Orchid Committee and acted as a member of the Horticultural Committee of the British Empire Exhibition in 1924. He is widely known in the British Isles and on the Continent, and his extensive knowledge of Orchids is probably unequalled.

MR. H. H. SMITH.

British Mycological Society.—At the meeting to be held in the Botany Department, University College, Gower Street, W.C., on Saturday, January 24, at 11 a.m., Miss E. M. Blackwell, M.Sc., will give "An Outline of the Life History of Phytophthora Cactorum, Schroet"; Mr. H. R. Briton-Jones, B.Sc., will deal with the diseases known as "Bark Canker" and "Die-back" of Fruit Trees; Mr. Ramsbottom will continue his "Fragmenta Mycologica (.II)"; Dr. M. C. Rayner will discuss "Sectoring in Cultures of Phoma radicis-Cullunae, Rayn"; and Mr. E. S. Salmon's subject will be "The Epidemic Appearance in England in 1924 of a 'Downy Mildew' of the Hop."

Flower Shows in America.—There will be an unusual number of important spring exhibitions in the United States during the coming season. In New York there will be the usual big show at the Grand Central Palace in March, at which some 30,000 dollars will be offered in prizes. Boston will hold two big exhibitions, one purely for members of the trade at the end of February, another by the Massachusetts Horticultural Society late in March. At Cleveland, the Ohio society, will hold a great exhibition in the vast new auditorium, and is offering 30,000 dollars in prizes. A similar, or larger, amount is being offered at the next National Flower Show of the Society of American Florists in Kansas City, Mo. All of these exhibitions will take place within a month of each other. The most important of the American exhibitions are in spring and summer, and there are fair numbers of autumn exhibitions. The spring shows, however, attract the largest attendances. America will hold its next convention and exhibition in Milwaukee, Wisconsin, about the end of the present month.

Presentations to Mr. J. E. Tugwell.—Mr. J. E. Tugwell, gardener to Major Dudgeon, Cargenholm, Troqueer, Kirkcudbrightshire, has been appointed by the Newton Grange Colliery Company, Ltd., as superintendent of their park, football and cricket fields, and bowling greens. Mr. Tugwell has taken much interest in local movements, and in appreciation of this the members of the Cargen Carpet Bowling Club, of which he was president, have presented him with a gold medal. The presentation was made at a meeting of the club, and the gift was handed over by Mr. Gray, who spoke highly of Mr. Tugwell's work in the club and in the community. The members of Troqueer Church Choir have also made a presentation to Mr. Tugwell in appreciation of his services to the choir. The organist, Mr. Leaver, made the presentation.

Appointments for the Ensuing Week.—Monday January, 26: Hove Horticultural and Allotment Society's meeting. Tuesday, January 27: Royal Horticultural Society's Committees meet; Newcastle and District Horticultural Society's lecture. Wednesday, January 28: Wimbledon and District Gardeners' Society's meeting; Mitcham, Tooting and District Horticultural Society's meeting. Thursday, January 29: Gardeners' Royal Benevolent Institution's annual meeting and election at Simpson's Restaurant, 101, Strand, at 2.30 p.m.; British Florists' Federation's annual meeting and dinner at the Connaught Rooms.

"Gardeners' Chronicle Seventy-five Years Ago.—*Gardening a Profession.* A man is not a physician because he calls himself one, any more than a man is a gardener because he assumes that name. There are quack doctors and there are quack gardeners. Men practise physic, although their education was that of a pounder of drugs; men practise gardening although they know no more than a bricklayer's labourer. But, surely, it is unjust to take such cases as indications of the general status of the callings to which they respectively belong. We are aware that, by the common law, a head gardener who lives in a house, furnished him by his master, on the grounds, has men under him, and receives a yearly wage, is a "menial" servant, and is liable to be dismissed at a month's notice, or on payment of a month's wages. But we do not think that important to the question at issue. The condition of mankind changes much faster that statute law. Surgeons were once accounted barbers; but will it be therefore said that our Brodies and Lawrences rank with hairdressers? In the days of Elizabeth players were rogues and vagabonds; can it be contended that Shakespeare then, or Young and Kemble since, were rogues and vagabonds? The legal condition of men in one century can be no rule to determine their social position in another century, because an old statute is unrepealed. In the reign of Charles II,. a clergyman was a menial, living with grooms and serving-men; a waiting-woman was good enough for his wife. Will "Timorous" contend that such is his station now? We have no hesitation in asserting that numerous gardeners are to be found who, in all that is essential to sound education, are, we do not say equal, but superior to numberless individuals belonging to what Mr. Timorous will admit to be professions. We have had in our hands gardeners' examination papers which would have stood high among those of the best medical students. *Gard. Chron., January* 26, 1850.

BULB GARDEN.

COLCHICUM AUTUMNALE VAR. ROSEUM.

I HAVE often wondered why Colchicums are not more often seen in gardens; probably it is because of their untidy foliage, which dies down at a period when summer flowers are looking their gayest. Certain writers persist in advising that Colchicums should be planted upon grassy banks or in grass plots, while others advise planting them among small Sedums! I should be extremely sorry for the latter if the Colchicums grow as they do at Coombe House, Croydon. My experience is that the plants keep the soil entirely free from weeds by the very denseness of their foliage.

The border illustrated (Fig. 19) is forty-eight feet long, and contains five rows of plants, the rows being one foot apart. The border was dug to the depth of eighteen inches, and is of ordinary light garden soil; trenches were cut out with the spade and the bulbs inserted one foot apart and covered six inches deep, the soil resting lightly over the bulbs. There are three fruit trees growing above them, and at the extreme end, on the right of the illustration, the branches are ten feet above the plants and yet the drip from them does not appear to affect the bulbs adversely. The position is in almost complete shade and the plants near the base of the trees are equally as fine as those receiving more light.

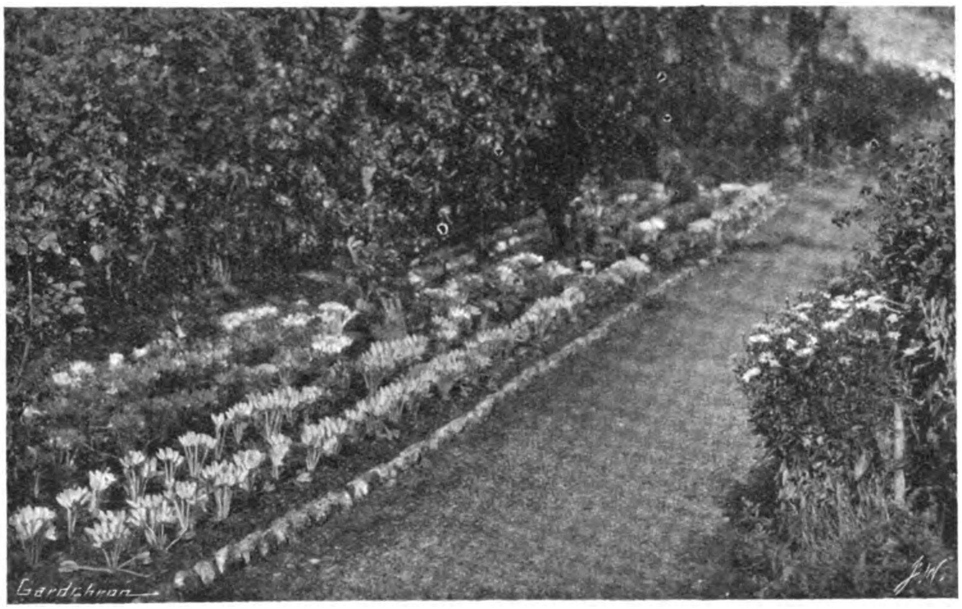

FIG. 19.—COLCHICUM AUTUMNALE VAR. ROSEUM IN THE GARDENS AT COOMBE HOUSE, CROYDON.

I have counted so many as twenty-eight blossoms to a plant, yet many authorities consider the results are good if there are clusters of six blooms; the flowers are six or seven inches high. This border was replanted in 1921 and is annually forked up in early August to give the soil a fresh appearance. The rosy-pink flowers are very effective, so much so that visitors to the gardens exclaim, "fancy, Crocuses in the autumn!"

After the experience of 1924 I do not agree that Colchicum flowers are badly splashed with soil after rain—as many writers would have us believe; the mass of flowers prevents such a catastrophe. The blooms last for a long time; the buds make their appearance generally about the end of August and flowering continues into October. The foliage is now well up and will develop by March or April; the leaves are large and fleshy and make a pleasing and welcome effect of light green in early spring. *Mark Mills.*

BRAVOA GEMINIFLORA.

FEW people are acquainted with the charms of Bravoa geminiflora, a delightful bright flowered, bulbous plant which is procurable early in the year and which should be planted in March or April to bloom the same season. It is one of the bulbs which are just on the border line between tenderness and hardiness, and in specially warm localities may be left in well-drained soil in warm positions during winter, but in most places the bulbs should either be lifted when the leaves wither or be protected by a frame in winter, it being preferable to lift them.

The plant resembles the Tritonia in general appearance, and the slender flower stems carry from twenty to thirty blooms arranged in pairs and of a delightful shade of coral-red. It is a cheap bulb, and a group of six or twelve plants is very attractive in the plant's season of flowering.

The bulbs should be planted at least two inches deep and three inches apart in a warm border in light, open, well-drained soil. This Bravoa is equally charming in an alpine house or conservatory, where it may be planted in March. *S. Arnott.*

IXIA SPECIOSA (SYN. CRATEROIDES).

THIS showy bulbous plant was introduced from The Cape in 1778, and is one of the most charming of a beautiful family of Irids. The blooms are greatly esteemed as cut flowers and for this purpose it is convenient to plant the corms in a cold frame in well-drained, loamy soil, or, grown in 48-sized pots, the plants are very serviceable for use on the stages of the cool plant house.

The crimson-red flowers are of large size for an Ixia, and the graceful foliage is most attractive. The plant has the additional merit of being most easily cultivated in perfection with the minimum of trouble.

This species, in common with other Ixias, may be grown in the open air in favourable localities; a south border in the shelter of a wall should successfully accommodate this choice species. *Ralph E. Arnold.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

The summer of 1924 having been abnormally wet and cold in the Scottish Lowlands (we shared neither in the warm spell that visited southern England in July and the northern Highlands, Orkney and Shetland in August), it is of some interest to note its effect—if any—upon winter-flowering plants as compared with the winter following the hot summer of 1921. The following table shows the dates on which the earliest flowers were observed:—

	1921-2.	1924-5.
Hamamelis mollis	December 26	December 19
Hamamelis arborea	Not recorded	January 2
Daphne Mezereum	February 25	December 25
Crocus vernus	February 5	December 20
Galanthus nivalis	December 22	December 20
Eranthis hyemalis	January 1	December 26
Leucojum vernum Vagneri	January 7	January 5
Rhododendron dauricum	December 23	December 18
Primula denticulata	March 1	January 4
Berberis japonica	November 5	December 18

Rhododendron Nobleanum was a full month later than the average, it usually begins to bloom early in November; this season it delayed till the first week in December, since which the bushes have kept up a magnificent display. Abutilon megapotamicum has been decked with its quaint scarlet and yellow blossoms ever since last midsummer. Desfontainea is still putting forth a few flowers in a similar livery, and Geum Borisii, as usual, has persisted throughout the dark days—the best of the genus, though a hybrid. *Herbert Maxwell, Monreith.*

KEW NOTES.

ALPINE HOUSE.

Those who visit Kew just now and are interested in hardy flowers will be surprised to see how few are in bloom of all the vast numbers of hardy species and varieties included in the national collections. Nearly everything is awaiting the advent of longer days and increased sunlight before commencing to send up their flower spikes, but a few amongst the alpines are already heralding the approach of spring. It was a very happy decision of the Kew authorities to build a special glasshouse where the earliest alpines could be gathered together and viewed in comfort, even on the most dismal day of winter. This small house is very fragrant just now with the beautiful scent of Petasites fragrans, sometimes known as Winter Heliotrope. The large, reniform foliage at once suggests relationship with the Coltsfoot, Tussilago Farfara, which is one of the earliest of our wild plants to send up its golden, Dandelion-like heads. P. fragrans has whitish flowers, stained with a little mauve; they are not very attractive, but make a delightful posy for the dwelling room owing to their delicious scent.

Primula effuse, a species very near to P. malacoides, with mealy leaves and stems, is one of the earliest of the Primulas to blossom. The flowers are in whorls of three to five and bear small, delicate, shell-pink coloured blossoms with an orange eye and an orange-yellow tube. This species has obviously affinities with P. malacoides, which has a superior inflorescence, so that P. effuse is not greatly wanted for gardens.

One of the most interesting subjects in the house is a pan of Primula frondosa, the resting buds of which look as if they had been whitewashed and surrounded by foliage that has damped off. These resting buds of certain Primulas are very interesting; P. scotica has similar ones, although smaller than in P. frondosa. Crocus Imperati is in bloom in the alpine house, and it has been in flower also in the rock garden for some time past. Crocus Sieberi, which is probably the best of the early Crocuses, is also in flower. The colour is China-blue, against which the rich scarlet stigmata and Orange-coloured throat show to advantage. With the Crocuses, some of the Snowdrops are in bloom, including Galanthus Elwesii and G. cilicius, the latter of which has been flowering for a month or more.

Some of the early Saxifrages are on the point of blooming, including the small, yellow-flowered Saxifraga Fleischeri, a hybrid; and also the pink S. Kellereri. The big leaved Saxifraga ligulata var. speciosa and S. megasaefolia are already out. Although not yet in bloom, Saxifraga Geum var. dentata is most attractive, with the ruby-red of its older foliage; a pan of this plant presents a very striking appearance. Another pretty foliage plant is Sedum spathulifolium var. purpurea; the older foliage, which is very fleshy, is finely coloured and the growths form rosettes of leaves with the younger ones in the centre quite green, the ruby colour deepening as it passes to the older leaves below.

Of the commoner winter flowers there are plants in bloom of Helleborus niger and Adonis amurensis, and these, together with those mentioned above, are the chief subjects now providing colour in the alpine house.

The finest of the Hellebores is out of doors in the garden beds—Helleborus corsicus, of which there is a big plant in the section devoted to Ranunculaceae. Almost opposite this, on the wall, is a plant of Lonicera Standishii bearing clusters of sweet-scented, white flowers of the usual Honeysuckle shape. Although the flowers are numerous the plant generally is not very attractive, although interesting for its precocity and also for its fragrance.

ROCK GARDEN.

A few subjects are already out on the rock garden. Erica carnea and its variety alba are both well flowered, and although this species is not so imposing as some of the Heaths, it is, notwithstanding Mr. Johnson's condemnation of the plant on p. 37, quite welcome in mid-winter. Other subjects of interest just now in the rockery are Helleborus sulphureus, forms of H. orientalis, H. viridis var. graveolens, and H.. colchicus, a chocolate-flowered form. These are associated with other Christmas Roses in a dell, but none of them would appeal to gardeners so much as a fine clump of the common white form of Helleborus niger. It was interesting to see Euphorbia biglandulosa in flower not far from where Daphne Laureola and D. Mezereum were blooming. A most interesting cross between D. Mezereum and D. Laureola, named D. Mezerula, is on the point of flowering at Kew for the first time. The foliage is evergreen, about the size and shape of that of D. Laureola, but dark coloured like the leaves of D. Mezereum. At first sight this plant might be mistaken for a small Rhododendron that had lost its lower leaves. It will be interesting to see what the flowers are like, whether green, like those of D. Laureola or coloured like D. Mezereum.

A fine plant of Tsuga canadensis variety pendula, on a bluff, is carpeted beneath with Primula Winteri, and the flowering plants appear to be very happy under the canopy of the evergreen, promising to give fine flowers later. Another interesting evergreen is Rhododendron Williamsiana, a low, prostrate, spreading species with orbicular foliage and prominent red buds. It is quite attractive for its foliage alone and makes a very pretty object in the rock garden in winter. R. moupinense will soon be in flower, but as this precocious species is usually cut off by frost, it is not to be greatly recommended, although many would like to include it in the alpine garden, as it grows only some six to seven inches high.

At the Richmond end of the rock garden there is a very fine plant of Apera arundinaceae with bronzy, arching foliage, of which Mr. Johnson wrote so appreciatively in his "Notes from a Welsh Garden," on p. 37.

THE GREENHOUSE.

The conservatory, officially known as No. 4 house, is attractive at all seasons of the year, but it is most appreciated in winter, when there are but few plants in flower in the open. Unfortunately, the exceptionably dense fogs experienced recently have injured many of the plants, and some of them are, as a consequence, looking very leggy. The beautiful blue Pycnostachys Dawei, for which Mr. L. R. Russell obtained an Award of Merit at the early January meeting of the Royal Horticultural Society, is one of the most conspicuous subjects in the house, and its blue is of a magnificent shade—rich, royal blue. This plant, which is a "fog-resister," needs to be grown in a bold group, for the tall stems, which in the Kew plants are some four to five feet, bear only one head of blossom, and there appears to be no sign of flowers from axilliary shoots. Other tall subjects which are used in groups include Moschosma riparium, with its dainty, feathery panicles of white flowers; Coleus thyrsoideus, another beautiful blue-flowered exotic; Salvia rubescens, with flowers of a most glorious scarlet; and Begonia manicata. Of these Coleus thyrsoides seems to have suffered most from the effects of fogs, which are frequent and dense at Kew when foggy weather prevails in the metropolis, doubtless because of the close proximity of the river Thames.

The plant stages have a very neat edging of Helxine Soleirolii growing in the shell and gravel with which the stage is covered; they are bright with a variety of subjects, including perpetual-flowering Carnations, a fine batch of Primula kewensis; P. obconica of a large-flowered strain; Epacris in variety; Leptospermum scoparium, which makes a dainty pot plant; Jacobinia chrysostephana, which is well furnished with its Orange or Citron-yellow coloured heads of flowers; Strobilanthes isophyllus that is smothered with its tubular flowers being quite one of the best of the dwarfer plants in bloom; Lindenbergia grandiflora; Reinwardtia tetragyna with beautiful yellow blooms of the colour of those of Jasminum primulinum; and R. trigyna which has a little Orange shading in the yellow of its flowers.

All those enumerated are very suitable for the decoration of the greenhouse or conservatory at this season of the year. However, to find the jem of the collection, we must look to the planted-out subjects in the beds, a magnificent Camellia, C. japonica magnolaeflora, whose flowers are of the most delicate, clear pink, and produced with the greatest freedom. The objection that some have to Camellias being stiff and formal cannot be advanced in the case of this charming specimen, for the petals are very loosely arranged, and stand well apart at almost right angles to the calyx. Close by, on a pillar, Barnadesia rosea from South America, is giving a generous display of its interesting pink inflorescences, which, when dissected, show the flowers to be all ligulate, arranging themselves in a pattern to form a bloom something like a small flower of a Dianthus. This plant was illustrated in *Gard. Chron.*, March 9, 1889, from a sketch by the late Mr. Worthington G. Smith, who has shown the flowers upright and not dependent as they grow naturally. It is remarkable that this beautiful climber is not utilised for the embellishment of greenhouses and conservatories more frequently, as it makes a handsome climber for a pillar supporting the roof. *T.*

ORCHID NOTES AND GLEANINGS.

PANICULATE ODONTOGLOSSUMS.

The type specimen of Odontoglossum crispum described by Lindley in 1845, from the example collected by Hartweg about three years previously, consisted of a panicle three feet in height, with five branches, bearing together twenty-six white flowers. Although Hartweg's ticket stated that the species produced sometimes branched and at other times simple spikes, no examples of the latter appear to have been seen until the importations of 1863 and later arrived, and these invariably flowered with a simple raceme, the want of knowledge of the two dissimilar methods of producing the flowers being, to a certain extent, an excuse for re-naming the plant as a new species.

The evidence of the collectors and the plants sent home by them, show that the best type has generally simple spikes with two rows of flowers, and when the species came to be grown extensively it was usual to see a houseful of this favourite Odontoglossum with only two or three branched spikes among them.

The flowers borne on the paniculate inflorescences, as in the type specimen, are invariably smaller and inferior to those on the simple spikes, and they are not in favour with the cultivator, who often removes the lateral sprays to allow of the better development of those on the main spike.

A plant which has produced single, unbranched spikes for several years may later produce a branched inflorescence, and this is commonly attributed to excessive vigour, but, the flowers being smaller and only occasional, this does not appear to be a satisfactory reason, especially when it is considered that in normal circumstances the panicled inflorescence is in the minority.

Such dual arrangements in the method of flowering are common in nature, and serve to effect an economy in reproduction. In nature, the establishment and reproduction of a species is provided for, and in the case of these showy Odontoglossums, the single spikes with the more attractive, fewer flowers, are adapted to supplying the pollen, while the occasional branched specimens with less ornate blooms favour the production of seeds. This was the opinion of the late F. C. Lehmann, a very observant collector, who had visited most of the habitats of the large-flowered Odontoglossums. He found very few pods on the simple spikes, but more on many of the paniculate forms, the flowers of which readily produced fruits; in one very exposed locality he found a large number of plants with branched spikes on most of the pseudobulbs, older ones bearing quantities of seed capsules, but the panicles of very inferior flowers developed no seeds, although the ovaries had swelled, the reason of this, and of the profusion of fruits on the old spikes being that dust and fine grit blown over the exposed ridge caused false fertilisation by irritation of the stigmatic surface.

The other large-flowered Odontoglossums have in some degree the same characters of producing their flowers as in O. crispum, O. Pescatorei being the most prone to branch in a young state. It transmits this character to its hybrids, the best example being the grand specimen of O. ardentissimum Pintadeau (crispum × Pescatorei), shown by J. J. Bolton, Esq., Claygate (gr. Mr. S. Lyne), with fourteen branches of eighty-three flowers, all of large size and rich colour, for which the R.H.S. Bronze Lindley Medal was awarded. It is interesting that this, and occasionally other branched Odontoglossums, flowered from the extremities of the branches first, a character not common in Orchids, although Cochlioda sanguinea invariably opens its first flowers at the apex and those nearest the plant last. *J. O'B.*

ODONTIODA MARIA.

A finely developed inflorescence of this handsome new cross between Oda. Sanderae, Cochlioda Noezliana × Odm. percultum, (ardentissimum × Rolfeae), is sent by the raisers, Messrs. Sanders, St. Albans. In colour, size, and form, it is one of the best of its class, showing the good features of Odm. Pescatorei. The ground colour of the sepals and petals is ruby-crimson, the reverse side of the segments being as dark as the front, which has a triangular, white marking at the base, the margins and tips having thin, silver-white lines. The lip closely resembles that of an Odm. Pescatorei, the front being white and the basal half ruby-crimson, the prominent crest being yellow, with dark red lines.

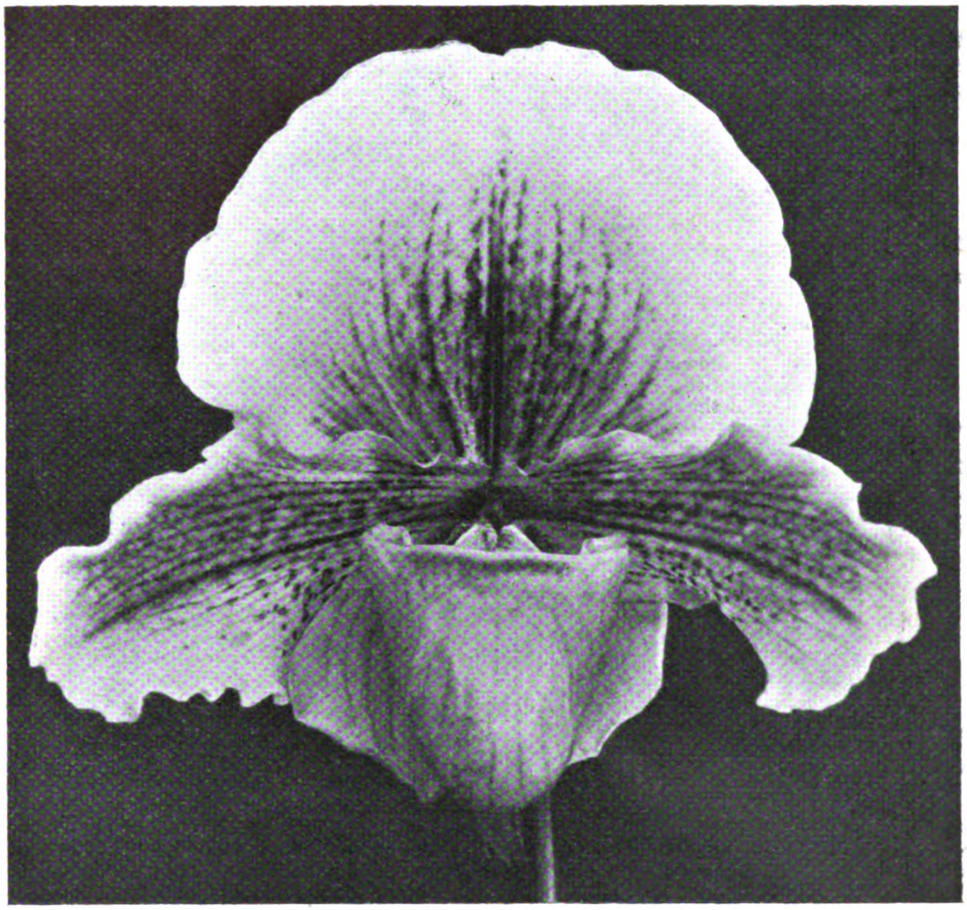

FIG. 20.—CYPRIPEDIUM MRS. ELEY VAR. DERRICK.

R.H.S. Award of Merit, January 13 (see p. 46.)

FLORISTS' FLOWERS.

NEW AMERICAN SWEET PEAS.

Many British growers will be looking forward to the flowering of at least two new American varieties of Sweet Peas. I refer to Sunshine and Fordhook Blue. If Sunshine comes up to its description it is sure of a hearty welcome—"a pleasing shade of soft, but rich, Hermosa pink with a blotch of the deepest Primrose at the base of the standard. The reverse of the standard is flushed yellowish-amber, and even the keel is heavily suffused light lemon." Fordhook Blue is "light, Violet-blue, clearer and brighter than any other Sweet Pea in existence." Both these varieties are on the market and may be obtained from British seedsmen, although they were raised in America and introduced by Messrs. Atlee Burpee and Co., Philadelphia. *C.*

NEW AMERICAN CARNATIONS.

An American correspondent informs us that there is nothing specially sensational amongst the newer Carnations raised in America last season. He states, "of Matchless, which remains our most popular pure white, there are one or two pleasing sports, Pink Matchless is not of a specially good colour in winter, but is a free bloomer, Rosalind is bright pink with a white edging. "Winsome, a variety introduced last spring, is easily the most popular of the pinks and is in big demand here. A very good variegated variety is Olivette, while variegated Rosalia is a large, fancy flower. Betty Lou, of Messrs. Baur and Steinkamp of Indianapolis, is doing well with many; it is of similar colour to Mrs. C. W. Ward, which has for years been the leader of its colour here. Amongst the brighter shades Spectrum, one of Mr. Dorner's introductions from Lafayette, Ind., is the best. Mr. Dorner introduced Laddie, Pink Delight, and many other of our finest Carnations. Another of the new pinks of similar colour to Mrs. C. W. Ward is Cheerful, while Gypsy is a vivid scarlet."

A Thousand Dollar Rose.—We learn from our American contemporary *The Florists' Exchange* that an anonymous donor has offered one thousand dollars for a new creamy-white or pure white Rose and one which will stand a rigid test of constitution, for it will have to undergo trials in five or six places in the United States. The full details of the competition have not yet been published, but we understand that climbing varieties are excluded from the contest.

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Cleansing the Houses.—Efforts should now be directed towards cleansing the houses which have not already received this attention. Before replacing the plants in their respective positions each one should be sponged with a suitable nicotine insecticide, taking care to dislodge any scale insects that may be present on the leaves and rhizomes. The overhauling of the plants will afford a favourable opportunity to determine any that require re-potting, which very few will need at this season, but, where a plant is at a suitable stage for the operation, it may be done at any time, provided careful watering is practised until the roots become active again.

Coelogyne.—Plants of Coelogyne cristata are sending up their flower spikes and should not be allowed to suffer for want of water at the roots, but moisture should not be allowed to accumulate in the young growths or the flower scapes will probably decay. The usual period chosen for re-potting these plants is soon after the flower spikes are removed, when they will commence to root afresh from the base of the new shoots. C. cristata and its varieties somewhat resent too frequent root disturbance, and it is frequently two years before they recover sufficiently to produce a good crop of flowers after being re-potted. Where several specimens are grown it is a good plan to attend to a portion of the stock each year. Fairly deep pans form the most suitable receptacles, and the ordinary compost of Osmunda-fibre, peat and Sphagnum-moss, should be employed. Plants of C. flaccida, C. Massangeana and C. tomentosa are at rest and will require but very little water at the roots until the flower spikes appear, or new growth re-commences.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Half-Hardy Annuals.—The section classed as half-hardy annuals includes many plants which in point of fact are fairly hardy but which need a long season of growth and are usually sown under glass in February and March and planted out later. Amongst these are many choice subjects which occupy important positions in the flower garden, such as Stocks, Asters, Alonsoas, Marigolds, Nemesias, Balsams, Phox Drummondii, Lobelias, Dianthus and Zinnias. For the rock garden several species of Primula should be included as also Alpine Poppies, Tunica Saxifraga, several of the dwarf Campanulas, Rock Roses (Helianthemum) Saxifrages and Æthionema amongst perennials and those charming little annuals Ionopsidium acaule and Linaria maroccana. Of perennials it is always worth while to sow a packet of Aquilegia, Delphinium, Lupin, Scabious, tall growing Campanulas, Oriental Poppies, Carnations and Pinks.

East Lothian Stocks.—These beautiful and free-flowering Stocks do not appear to be so popular in the south of England as in the north, yet they do equally well if given good treatment. They require a fairly long season of growth, and seeds should be sown not later than late January or early February to produce strong plants for putting out in late May. As bedding plants these Stocks are very effective, and they remain in beauty over a long period. From plants raised now and grown well, the central spikes develop as early as June, and as these pass out of flower they are succeeded by numerous side-flowering shoots which carry on the display until late autumn.

Spring Flowers.—Beds which are planted with spring-flowering bulbs should be kept free from weeds. Where Crocuses, Snowdrops, etc., are planted in grass the accumulation of leaves on the surface should be prevented. Mice are frequently troublesome and particularly damaging to Crocus bulbs. Therefore every effort should be made to trap them, using traps of various types. Other spring-flowering plants such as Arabis, Aubrietias, Violas, Forget-me-nots, Wallflowers, etc., used for carpeting or as whole beds, should be examined periodically, and if they have become loosened in the soil they should be pressed firmly into position and have the surface soil pricked over whenever practicable. Auriculas and Polyanthuses have a tendency to become long necked, and derive great benefit from a top-dressing of leaf-mould or other rich material.

Climbers.—Many climbing plants on walls, being in very sheltered and warm positions, make new growth early in the season, and any necessary work of pruning, tying and training should be carried out while the plants are still dormant. Examine all old ties and remove any that are likely to compress the bark during the next period of growth.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Figs.—The earliest Fig trees in pots should now be started. Plunge the pots in a bed of leaves which will give sufficient bottom heat. The house should have a night temperature of 50° with a rise of 10° during the day. Spray the trees gently overhead with tepid water in the early mornings and again at 2 p.m., at which hour the house should be closed. A number of cuttings should be rooted annually; the shoots, with well-developed terminals, should be placed around the edges of 5-inch pots containing a very sandy compost and plunged in bottom heat in hand-lights or in a propagating case having a temperature of 65° to 70°. The best varieties for pot cultivation are Pingo de Mel, Brown Turkey, Violette Sepor, Negro Largo, and Boujassotte Grise.

Cucumbers.—Where a sufficiently warm house or pit is available the first sowing of Cucumbers should be made, as early fruits are greatly appreciated. Place two seeds of a reliable variety in a 2-inch pot, removing the weaker plant later. Plunge the pots in strong bottom heat. Place sheets of glass over the pots and wipe off the condensed moisture each morning. The seeds germinate quickly and the seed-pots should not require water until the plants are well through the soil. Cucumbers should always be grown quickly and never be allowed to suffer from lack of moisture. The materials for the making of the hot beds having been thoroughly well prepared, the beds should now be made in the houses or pits ready for starting this early crop of Cucumbers.

Pot trees.—Pot fruit trees, having been plunged out-of-doors during the winter, Early Rivers Cherry and Gage Plums may now be taken indoors and their forcing commenced. See that the drainage is perfectly clean, wash the pots and stand each one on two bricks placed edgeways, leaving the drainage hole of the pot free. Keep the ventilators open, except during frosty weather, for a few weeks.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Carnations.—From now onwards and until sufficient new stock has been raised to meet the requirements of the establishment, cuttings of perpetual-flowering Carnations should be inserted as they become available. Choose sturdy cuttings, about two-and-a-half inches long, from near to the base of the flowering stems, detaching them by a sharp downward pull. I favour the striking of these in deep saucers or shallow seed pans filled with sea sand, or failing this, then with sharp silver sand and a small proportion of finely-sifted loam. Dibble the cuttings closely in the pans and place them in a propagating frame in a temperature of about 55°.

The Stove.—The pruning and thinning of stove climbers should be completed forthwith, provided the plants have been allowed a period of rest in which the growths will have become well matured. Dipladenias are amongst the most beautiful of stove climbers. They should be cut back hard before they start into growth, the flowers being produced on the current year's growth. When grown in pots, which should be of a large size, the plants, after making slight new growth, should be shaken out of the old soil, and be re-potted in a compost comprising three parts of peat, one of light, fibrous loam, some well decomposed cow manure and plenty of sharp sand and broken charcoal. When grown in permanent beds, these latter should be somewhat restricted in size, and whether grown in beds or in pots ample and efficient drainage should be provided and plenty of room allowed for water, as these plants require copious supplies of water when in full growth. Allamandas should receive a severe thinning, cutting back the growths of last year to the old wood. A soil comprising a major proportion of loam with some peat, cow manure, charcoal and sand, suits these plants. They also require an abundance of water at the roots in the growing season.

Seed-Sowing.—Sow seeds of Clerodendron fallax, Gloxinia, Gesnera, Saintpaulia, Streptocarpus, Begonia, Asparagus Sprengeri, A. plumosus and A. decumbens, all of which will be the better for a stove temperature throughout the early stages. The seed-pans or pots should be filled with light, sandy soil, and watered a day before sowing. A propagating frame over a mild hot-bed should be prepared in which to germinate the seeds.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Planting.—Where planting is in arrears every opportunity should be taken to complete the work. Trees purchased from the nurseryman in the late autumn and received when the ground was not in a fit condition for planting them, have since been heeled in a trench and earthed over for the time being. In taking them from the trench be careful not to damage any new roots that may have developed. Our heavy soil is still working very badly; I find it a capital plan to have a heap of soil in a dry place, such as a mixture of old potting soil, wood ash, leaf-mould, old mortar rubble, coal ash, lime, and screenings from the garden heap. These materials provide a good compost for the roots of young trees and are suitable for planting Apples, Pears, Peaches, Plums, Apricots, Cherries, Figs, or any kind of small bush fruit. Previous to planting, all the ground should have been well trenched at least two spits deep, using plenty of lime if the soil is of a heavy nature. I do not recommend the use of farmyard manure or concentrated fertilisers for newly-planted trees. They result in the trees making gross-growth in their early stages, with the consequence that the wood does not ripen properly. A mulching of half-decayed leaves is all that is required to keep the ground from cracking in hot, dry weather and is preferable for use as a mulch than litter from the stables.

Standard Trees.—Standard Apple trees should be carefully attended to: cut away overlapping branches, shoots that cross each other, and all dead wood; keep the trees well open. Standard Plums should have all dead wood cut away and the branches thinned sparingly, as when Plum trees grow to a large size the branches are liable to die back. Standard Pears and Cherries need the same attention as advised for Apples and Pears. All wounds and cut surfaces should be pared smooth with a sharp knife and dressed with gas tar. The prunings, dead wood, and branches removed should be collected and taken to the fire.

Preparations for top-grafting.—All worthless Apple trees should be headed back in readiness for re-grafting later in the spring.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Cauliflowers.—Cauliflowers wintered in frames should be watered carefully; admit air on all suitable occasions to obviate damping. To succeed this batch, seeds should be sown in gentle warmth in boxes; when the seedlings are large enough to handle prick them off into boxes and place them on shelves near the roof-glass to ensure sturdy growth. When the plants are sufficiently large they should be placed in warm frames or other suitable place that is available. The soil in which the seeds are sown should consist of two parts loam, one part leaf-mould, and one part sand.

Leeks.—If Leeks are required for autumn exhibitions or early use in the kitchen, sow seeds forthwith in light, loamy soil, and germinate them in a temperature of 50° to 55°.

French Beans.—Sow batches of French Beans periodically according to the demand by the particular establishment. The seeds should be sown in 8-inch to 10-inch pots furnished with plenty of drainage materials. The soil should consist of good loam and coarse leaf-mould, or old Mushroom bed material chopped finely. Half fill the pots in order to leave room for a liberal top-dressing later. When the seeds are sown place them in a house having a temperature of 65°. Keep the plants well syringed on bright days as they are very susceptible to attacks of red spider. If plenty of heated pits are available, these may be used for sowing the seeds in beds instead of in pots. For supports, use twigs trimmed from Pea sticks; this method will save time and labour in staking and tying the plants to single supports.

Broad Beans.—Broad Beans may be sown so soon as the ground is in a suitable condition. The seeds should be sown in either single or double lines, whichever is preferred. Allow plenty of room in the rows—at least six inches apart, as no benefit is gained by overcrowding.

Spinach.—It may be considered by many much too early for seed-sowing out-of-doors, but gardeners have to take risks where early vegetables are in demand, and unless there is a large amount of glass available for growing early vegetables, chances must be taken. I would also advise a sowing of Summer Spinach in as warm a spot as can be found. This crop will be found a welcome addition to take the place of Spinach Beet that is now being used.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Pergolas.—These may now be constructed or existing ones overhauled. They may be furnished with rambler and climbing Roses, Clematis montana, C. florida, C. Jackmanii, C. lanuguinosa, Vitis Coignetiae, V. purpurea, V. Henryana, all of which have proved to be quite hardy in northern gardens; Wistarias, Jasminums, and Honeysuckles.

Begonias.—Tubers of bedding Begonias, whether stored in bulk or in small quantities, should be again examined and any diseased ones removed. Begonia Caltonia and B. Worthiana may be increased from cuttings. Place the old tubers in boxes and introduce them to heat. Cuttings taken from these Begonias will, if well treated, produce good flowering bulbs for next year. Both these Begonias may also be increased by division. After cutting the dormant bulbs in halves, it is wise to dip the cut surfaces in hot lime.

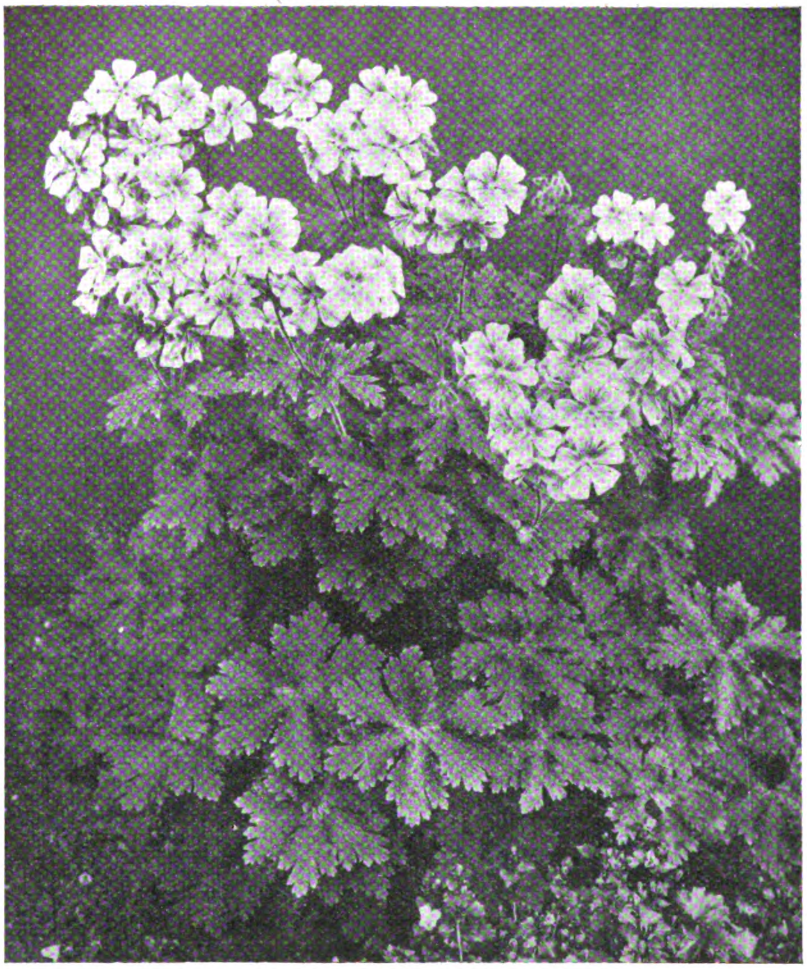

FIG. 21.—GERANIUM GRANDIFLORUM.

Japanese Acers.—These beautiful Maples may be grown in sheltered places in the pleasure grounds and shrubberies. The following are a few of the best for colour effect: Acer palmatum atropurpureum, A. p. a. variegatum, A. p. aureum, A. p. roseo-marginatum and A. filicifolium. All these are perfectly hardy. A well-drained soil is necessary and the plants grown in a situation sheltered from cold winds.

Topiary.—Topiary specimens, especially those of Box should be afforded protection from heavy snowfalls.

HARDY FLOWER BORDER.

GERANIUM GRANDIFLORUM.

AMONG the hardy Geraniums there are many handsome plants, the more vigorous being suitable for growing in the border with other herbaceous plants, or even in the wild garden, where they soon become established in any light and well-drained soil.

The plant illustrated in Fig. 21 is one of the stronger growing species and was introduced into cultivation some twenty-five years ago by Max Leichtlin, from the North-western Himalayas. It is a handsome plant somewhat in the way of our native G. pratense, of which it may be described as a dwarf form of more compact habit.

The large, bright purple flowers are produced from June to September. Like most of the other robust kinds it is of easy cultivation in sunny positions, and may be propagated by division of the roots in autumn or spring, or raised from seeds. *W. I.*

INCARVILLEA DELAVAYI.

WE are indebted to the French missionary in China, M. Incarville, for the introduction of this beautiful border plant which was named in his honour. There are few tuberous-rooted border perennials that can claim the combined charm of beautiful foliage and imposing inflorescence; as a foliage plant Incarvillea Delavayi is all that could be desired, having serrated, deep green, large leaves of a leathery texture, from which arise the graceful flower scapes to a height of from one foot to three feet and sometimes taller.

The numerous Allamanda-like flowers are of shades of bright rose to deep crimson, and they last in good condition for a long time. It would be difficult to pronounce which is the more attractive, the foliage or the flowers.

To obtain the most satisfactory results, a deeply trenched rich soil is necessary, as this tuberous-rooted plant needs a deep root-run.

Incarvillea grandiflora bears large, trumpet-shaped, crimson flowers, with pale yellow throats, on scapes from twelve to eighteen inches high, in May and June.

Incarvillea grandiflora var. brevipes, collected by Mr. George Forrest, on the high Alps of Yunnan, China, is an outstanding variety of this species, the flowers being larger than in the type and of a brilliant crimson, with a conspicuous white throat; the flower scapes are from two feet to three feet tall.

Incarvillea Olgae has large, showy, trumpet-shaped, bright rose flowers, on stems three feet tall; the plants season of flowering is July to August.

I. variabilis is quite distinct from any of the above, having pretty, Fern-like foliage, and showy pink or rose-coloured flowers on stalks one foot to one-and-a-half foot long, produced during July and August.

Incarvillea thalictrifolia is similar to the last as regards foliage, but has small, canary-yellow flowers, the throat lined with crimson and closely resembling a bloom of the greenhouse Streptocarpus. *W. Logan.*

THE ROSE GARDEN.

ROSES IN U.S.A.

STEADY progress is being made in the production of new Hybrid Tea Roses for forcing purposes in America. The Rose is by far the most important market flower at all seasons in this country, particularly in winter. Our clearer skies permit flowers of exceptional qiualty being produced right through the winter. Houses for Roses are growing steadily larger; one nearing completion at Madbury, N.H. for the W. H. Elliott Co. of Brighton, Mass., is eight hundred feet long and eighty-one feet wide, while this same firm has another house 1,360 feet long but a little narrower than the newer house, and this firm is but one of a great number of growers scattered all over the United States.

Of the newer Roses, Templar, raised by the Montgomery Co., Hadley, Mass., is proving extremely popular. The flower is of a rich glowing crimson-scarlet colour which does not fade out, and it has a very pleasing fragrance. It is not a particularly large bloom and the petals are thinner than in some others, but it is proving to be a splendid winter bloomer.

Sensation, introduced by Messrs. E. G. Hill Co. is of similar colour and possesses fragrance; it also is much larger, but the plant flowers less freely and fades out black after being in cold storage for a day or two. Still another red Rose, Red Premier, bids fair to become extremely popular. Premier has sported red with a number of growers, and as it is a free winter bloomer, its sport should be in great demand

Mrs. Calvin Coolidge, a yellow sport from Ophelia, was introduced last spring by the F. R. Pierson Co., of Tarrytown, N.Y. While this variety is a free bloomer, it is at a great disadvantage when compared with Souvenir de Claudius Pernet, which is the most popular yellow Rose ever grown under glass in America and realises a higher price than any other Hybrid-Tea. It does splendidly under glass and one good point about it is that the flowers become more golden as they expand and have remarkable lasting properties. I have seen this yellow Rose exhibited here in mid-winter with immense flowers carried on stems five feet to six feet long.

Nothing specially new is offered this year with the exception of one or two light sports of Columbia. This latter Rose remains the most favoured of its colour here. It is the reverse of pleasing in the bud stage, throws a good many "bull-head" flowers and lacks the fragrance of America. The comparative failure of America to hold the leadership amongst the pink Roses for forcing seems almost tragic. Here is the most beautiful Rose of its colour ever introduced, which Mr. E. G. Hill rightly classes as his masterpiece, and one which has received high honours in Great Britain, yet after growing it for one season many of the larger growers entirely discarded it, the reason being that the petals were a little soft and easily bruised. Out-of-doors this Rose is the superior of Columbia, and signs are not wanting now that with different treatment under glass it will return to favour with market-growers. Ophelia under glass here is almost a back number; Mme. Butterfly has displaced it almost entirely and this latter Rose is, with Columbia, the two most popular varieties Roses for forcing on this continent. Mme. Alexander Dreux, which is to be sent out this spring, will, it is believed, prove extremely popular on account of its glorious colour.

OUT-DOOR ROSES IN AMERICA.

IT is in such states as Oregon where Roses are seen at their best out-of-doors in this country, Portland being classed as the "city of Roses," but a striking advancement in their culture is taking place in the colder eastern states. Rose gardens are becoming increasingly popular and greater care is being taken than formerly in the location of these gardens, as well as thorough soil preparation and drainage. As our winters are quite severe here with the temperature below zero on many occasions, and high winds usually blow on the coldest nights, winter protection must be efficient and banking up the plants with soil is the best method yet devised supplemented, after the ground is frozen very hard, with coverings of leaves or straw, evergreen branches being laid over these; sometimes fences of Burlap are also used to mitigate the effect of cold winds.

The bulk of our Roses are planted in spring; I have had far better success with fall planting in late October and right through November. Roses sold in spring have been stored in sheds or cellars over the winter and are often very badly shrivelled, in many cases being actually dead when they are sent out, hence, there is a great number of blanks to fill each year.

Varieties grown here are much the same as in England. The freest blooming of all hybrid Teas is Ophelia, and no other sort compares with this. As a yellow variety, Souvenir de Claudius Pernet does extremely well even when planted in autumn, and black spot troubles it but little if care is taken to pick up all fallen leaves, to dust spray regularly, and to avoid manure mulchings and night watering.

Amongst other Roses which do very well here are Rev. F. Page Roberts, Independence Day, Mme. Leon Pain, Lady Pirrie, Golden Emblem, Souvenir de Georges Beckwith, Lady Hillingdon, Red Letter Day, Mrs. Henry Morse, Mrs. Wemyss Quin, Queen Alexandra, K. of K., Miss Lolita Armour, Los Angeles, Constance, America, Willowmere, Radiance, and Mrs. S. K. Rindge.

The hybrid-perpetuals have declined in favour here as in Great Britain, but strong efforts are being made to bring them back into favour on account of their greater hardiness than the hybrid Teas, this making them better for planting in our colder states.

Climbers and Ramblers have been extensively planted in late years, the introductions of the late Dr. Van Fleet and M. H. Walsh being in especial favour. Paul's Scarlet Climber is in great demand, both as a forcing Rose for Easter blooming and as an outdoor climber. Even the old Gloire de Dijon is still planted and will winter in Massachusetts if suitably protected; this latter variety brings back many pleasant memories to the great number of us who received our early training in Great Britain.

Among Rose species Rosa Hugonis has grown greatly in favour; it is the earliest Rose to bloom here and withstands very cold weather with impunity. It is regrettable that in the past two years a serious blight has attacked this Rose, apparently vigorous plants, or large branches, dying off in a night. This disease appears to be very similar to that causing blight on Pear trees, which kills out entire branches at the height of the growing season. The disease is being studied in at least one agricultural college, but as yet no possible cure has been suggested.

ROSE STOCKS.

OUR growers of Roses under glass are so far unable to dispense with the Manetti stock; Rosa multiflora did not prove a success. So far domestic sources of the supply of Manetti stocks are very uncertain, and forcers depend in the main on importations, which are still vouchsafed to us. Trials are being made with Rosa odorata indoors; some growers praise it, others condemn it as suckering badly. In California this latter stock, which proves tender in New England, is being used in great numbers, and some of our eastern dealers in hardy Roses are securing their entire stock from there. How long these Roses will survive in our colder states remains to be proved, but it is entirely improbable that it will be as long as plants worked on Manetti, rugosa, or multiflora stocks. The last-named stock I like very much; it gives a far better root system than Manetti and has the added advantage of suckering but very little. Nearly all the eastern propagators of Roses in the open are using multiflora and the Roses they are sending out compare very favourably with those I have previously had on the Manetti. *William N. Craig, Weymouth, Mass., U. S. A.*

ALPINE GARDEN.

SAXIFRAGA PRIMULOIDES.

POPULAR taste at present does not greatly favour the Saxifrages of the London Pride section, although they have many points to commend them to those not entirely devoted to the more minute plants and the exquisite Kabschia and Euaizoon Rockfoils. There is, for example, the attractive foliage of the plants, which varies greatly in size and appearance, and the lace-like flowers, which look pleasing in a mass. The old London Pride, or more properly, London's Pride, acquired the names of "None-so-pretty" and "Queen Anne's Lace-work,' but since Saxifraga umbrosa was introduced we have had many others of this Robertsonia section, and none more delightful than the little S. primuloides. The late Mr. Farrer, after referring to others of the section, calls S. primuloides "incomparably the most delightful of all." "This makes a neat and charming little massed colony of a copious growth, with mounded rosettes of dark, down-lying, wavy-edged, fat foliage and countless eight-inch showers of brilliant soft-pink stars of pinkish stems in early summer—a beauty of the greatest willingness and charm."

This plant is easy to cultivate almost anywhere, on the edge of the border, in the rock garden, or even in the morain—as I have proved. It likes shade but does not object to sun, and is a truly accommodating little flower in almost all kinds of soil that is reasonably free in texture. *S. Arnott.*

PROBLEMS OF WORM LIFE.

(*Continued from page 25.*)

It has long been known to students of animal life that worms lay eggs. The processes, however, are even yet but imperfectly understood, and it is the purpose of this note to deal with the facts already known, and point out where further research is yet to be desired. In the first place a glance at the history of the subject is desirable. In 1845 Hoffmeister gave an account of his observations, in which he stated that the older worms came out from their burrows first, the younger ones exhibiting greater caution. When two worms met he noticed that they examined each other critically, exchanging greetings only when satisfied that they were suited for mating. Approaching each other from opposite directions, the head of one towards the tail of the other, they first did a little wooing, then joined their ventral surfaces, which soon began to undulate, when the seminal fluid passed from one to the other.

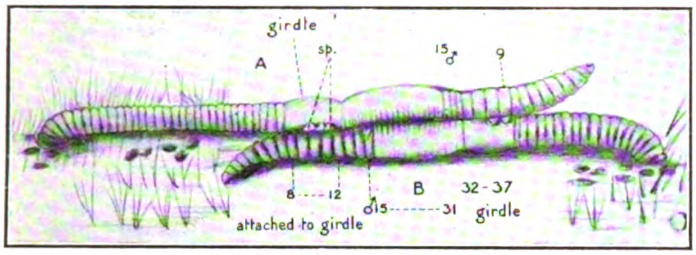

FIG. 22.—LUMBRICUS TERRESTRIS IN CONGRESS, PASSING SPERMATOZOA.

In 1856 Hering took up the subject and carried it a stage further. He observed that the girdle of one worm was brought into contact with segments nine to eleven of its partner, mucus being exuded which hardened into an enveloping band, or rather into a pair of bands, since each worm was actively engirdling the other. Waves of muscular contraction and dilatation caused the seminal fluid to flow from the pores of one to the receptacles or spermathecae of the other; the process being open to observation as the worms lay on their sides. He further noted the peculiar bodies so often found on worms after this process is complete, to which the term spermatophores has been applied. Recent research leads us to doubt the analogy between these apparently accidental bodies found externally and the true spermatophores which are frequently found in aquatic annelids and other allied creatures.

In 1895 Andrews summarized the researches of Hoffmeister, Hering, and others, and added some interesting facts with illustrations relating to the Brandling. Since there are very marked differences between the structure of the earthworm and that of the Brandling, we must be prepared to find differences also in their methods of egg-laying. How far these differences are superficial and how far essential remains yet to be seen. Some worms are always found to secrete circular bands of mucine when they are in congress, and this has led to the statement that they were egg-cases or cocoons; but microscopic examination combined with suitable re-agents has shown that cocoons are formed of a different material from that of the mucous bands. It has long been assumed that the egg-cases are formed from certain glands located in the girdle, and this assumption is undoubtedly correct; but, if so, the glands which have been called capsulogenous are misnamed. Do they secrete the mucous bands?

Every worm, as is now well known, is both male and female, but the ova of one must still be fertilized by the spermatozoa of another. In botanical language self-fertilization does not take place, but cross-fertilization is as necessary as it is in a Primrose or other monoecious flower. But worms differ from flowers in one important respect. While the pollen of one flower is carried directly to the stigma of another, the spermatozoa of one worm are not brought directly into contact with the ova of another. Receptacles, termed spermathecae, are found in each adult worm in which the spermatozoa of the mating worm are stored, until the egg-case is formed and the ova are deposited. But it is just here that, even now, our ignorance reveals itself. If only male germs pass from one to the other, what stimulus is given to the worms to lay their eggs? Are cocoons formed immediately after congress has been effected, and while the ovaries are still excited thereby; or can the germs remain for days, weeks, or even months, as some writers have imagined, stored up in their caskets while the worm lays its eggs at leisure? Is it necessary that fertilization should take place every time the ova are extruded, or can a series of eggs be laid in succession and rendered fertile after any given act of copulation? What of Bimastus, which has no spermathecae? These are problems which, as yet, remain unsolved.

It is often possible to obtain light on a subject by studying related forms of life which are more plentiful, more easily handled and examined, or in some way or other more amenable to treatment. Thus the pot-worms (Enchytraeids) are at once abundant in numbers, small in size, transparent in structure, and easily prepared for microscopical examination; and as they are in many ways closely related to the earthworms, they can frequently be made subservient to the ends of the biologist who is working on earthworms. For example, every botanist knows that there are some plants (as the Foxglove or Digitalis) which ripen their pollen before the stigmas of the same flower are ready for fertilization. These are called protandrous or proterandrous. Others, known as proterogynous, reverse the process, and ripen the ovules first. How is it with worms? Among the Pachydrilids I have often observed proterandry, but after a time the ova have matured, while the testes still remained active. In earthworms, so far as I can judge, protandry is not a distinctly marked characteristic, though I believe it occurs. Since recent research shows that when two worms are in congress they both function as males and not as male and female respectively, it seems perfectly clear that the spermatozoa ripen somewhat earlier than the ova. Had one functioned as male and the other as female, then the sexual products must obviously be mature at the same time; though even then one might be proterandrous and the other proterogynous. But if two cocoons are formed at the same time, one by each worm, then the ova and spermatozoa of each alike must be mature at one and the same time. In spite, however, of certain statements to the effect that eggs are laid in pairs, I believe that each worm forms its own cocoon, not during congress, but after the couples have separated. This, at any rate, is the case with certain worms which I have placed in solitary confinement and observed during the process. If large specimens of the white worms found in manure heaps, furnished with well-developed girdles, are placed separately in suitable receptacles with damp blotting paper, a cocoon may frequently be found the following day deposited by the solitary individuals.

That the cocoon is secreted by chitine glands in the girdle of earthworms seems apparent from the study of pot-worms (Enchytraeids), since the oviduct in this group of worms is at the posterior extremity of the girdle. When the cocoon is formed the ova pass into it, along with the albumen which is to serve as food. The whole is then slipped over the anterior portion of the body, and obtains the fertilising germs from the spermathecae which are passed on the way. When cocoons are kept in the laboratory for purposes of investigation, it often happens that symbiotic, if not parasitic, life-forms manifest themselves. It therefore seems possible that some of the many parasites with which many different annelids are infested, may find their way into the animal during its embryonic developments.

As many of the problems of worm-life are too technical for treatment in a journal of this description, I pass over a number of important points and close by an allusion to the illustrations. The first (Fig. 22) shows a pair of earthworms (Lumbricus terrestris) lying side by side, outside their burrows. It will be seen that the girdle of the one (A) is applied to the segments of the other (B), which contain the spermathecae, and that masses of spermatozoa (*sp.*) are collecting at those segments (9–11) where the orifices of the spermathecae are situated. The problem here arises why the germs should pass from segments 15 of A to segments 9–11 of B, if the girdle is not to produce a cocoon? Why should not the male pore on 15 of the one worm be placed opposite the spermathecae of the other?

In the second case (Fig. 23) we have to deal with a different genus, nearly related to the Brandling. Some years ago I found in the gardens of the school at West Malvern a new variety (var. robusta, Friend) of the Venetian Worm (Eisenia veneta, Rosa), which seems never to have been collected elsewhere. On September 8, 1924, I revisited the gardens and found a pair of specimens in the condition here represented. It will be noticed that the girdles AG and BG seem entirely to encircle both worms. In reality this is not the case. If a transverse section were taken through either of these girdles (as shown in Fig. 23) it would be found that the girdle (AG) half enveloped the body of B, while a band of mucine (*b*) entirely encircled the whole. This band is held by some to be a cocoon, by others it is affirmed to be found of a different material. If it is the egg-case then two cocoons are formed by Eisenia when congress is in progress. Otherwise each worm forms its own cocoon later, independently. I found that it took this later pair of worms three minutes to wriggle out of their enveloping bands, so closely were they held together.

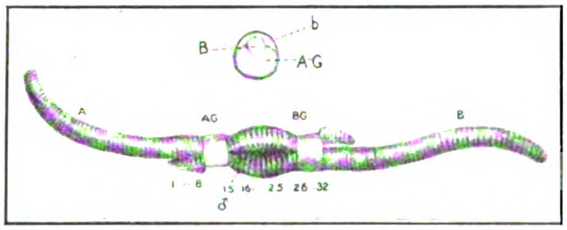

FIG. 23.—EISENIA VENETA VAR. ROBUSTA × 3.

Naked eye observations may easily be misleading if not checked and augmented by microscopical investigation and chemical re-agents; but much good service could be rendered by observers if they would make careful records of what they see. The writer would be glad to give guidance to correspondents who would like to know how specimens found under such conditions may be preserved. *Hilderic Friend, Solihull.*

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LILIES IN 1924.

THE perplexing mutability of our climate is a source of perennial interest and wonder to gardeners. Elders of the craft may sometimes think that in half a century Nature has rung every possible change on them and played them every trick of which she is so consummate a mistress. That may be so, but in the twelve years during which this annual chronicle has been printed there has been none like that recently ended.

The year 1924 will go down in gardening history as a year of surprises. Climatically, it was exasperating beyond expression, but for all that it was a wonderful year in a horticultural sense, while physiologically, there was much about it that to a layman seemed to need explanation. Nine out of ten experienced gardeners in the home counties would probably say that the climatic conditions antecedent to what we may call the flowering season of 1924 were the reverse of conducive to the general welfare of hardy plants, while, except for three glorious weeks in July, the weather of the year itself was consistently atrocious. Yet who can remember a season in which there was such prodigal and prolonged wealth of bloom on hardy herbaceous and bulbous plants in general, and garden Roses? As an example, some plants of Gladiolus princeps the writer had under observation were in flower for thirty-one days, a batch of three old plants of Thalictrum dipterocarpum bloomed continuously for thirty-seven days, and a clump of Lilium croceum for an average of thirty days!

Science may be able to offer some explanation of the apparent anomaly presented by such luxury of flower in a season so wet and sunless, following a rather similar season in the preceding year; but the lay mind is left groping, and, in its perplexity, turns to the long winter of 1923-4 as possibly contributing in some measure to the anomaly. But though the winter may have influenced the flowering of established plants it could hardly have affected Japanese Lilies or Gladioli planted at the middle and end of March.

If we persuade ourselves that the beneficent effect of 1921 was still potent in 1924, the same objection holds good for newly-planted exotic bulbs, and we are driven back on the theory that the fine display made by such bulbs was a mere coincidence.

In common with all vegetation, Lilies were slow to push through the earth in 1924, and there was none of the precocious growth which has been so noticeable of late years. Even L. speciosum hung back, and that is a sure indication of an unusual state of things. The vernal Crocus was not in bloom till St. Patrick's Day, and it was only at Easter that a few warm, sunny days brought the advance guard of Lilies spearing through. Thereafter, a relapse to icy winds and cold weather kept them spellbound, and there was no general rush to the sun till spring began in earnest in the middle of April. Even then the earth was so cold that bulbous plants moved hesitatingly and as if uncertain of their destiny.

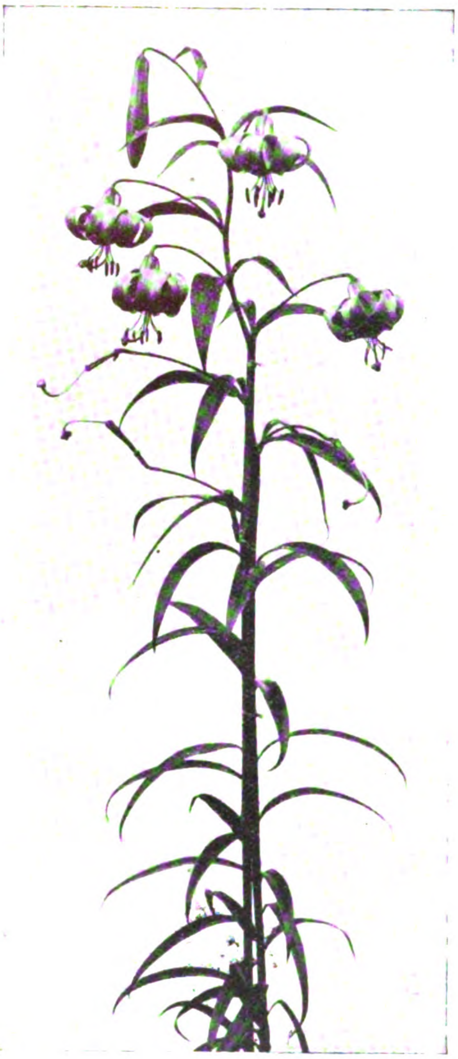

FIG. 24.—LILIUM NEPALENSE.

(Forrest's No. 15827) in the Gardens at Endsleigh.

In the absence of any prolonged warm weather it was inevitable that the opening of the season should be delayed, and the first week of June had passed before that usually reliable time-keeper, L. pyrenaicum, opened its petals. Long before then Botrytis had begun its deadly work under conditions which, if not essential, are obviously ideal for it—cold winds and a humid, sunless atmosphere. Though other Lilies did not escape, L. candidum, as ever, was the first to fall victim to this insidious disease, for which research ought surely to have found a prophylactic by now; and, incidentally, it was noticed that the wild (Salonica) form of this Lily, for the introduction of which gardeners have to thank Mr. Ambler, who sent bulbs to Mr. Bowles in 1917, was not so resistant to the disease as it seemed to be at first. In the course of many years' observation of the incidence of Botrytis, the writer has noticed sufficiently often as to place the point beyond doubt, that the sun has more control over the fungus than anything else. In years of abundant sunshine, such as 1911 and 1921, Botrytis was not in evidence on Lilies, and in other years its progress had been tardy or rapid to a degree depending on the sun. Last year provided a capital illustration of the hold sunshine has on this fungus, for in the wet, dull, and chilly weather which prevailed in the south from the end of April to the end of June, it gained a firm hold on Lilies of many kinds. Half way through June it seemed as if the season would be a failure, but the coming of the sun at the end of the month worked a magical change. Gardeners will remember that in the south there was a spell of almost tropical sunshine and an entire absence of rain from the end of June till July 18, and, in less than a week after this sunny spell had begun, Botrytis was scotched. A few days later it was beaten, and more remarkable still, many plants which had been crippled by it made a wonderful recovery.

Although, as already mentioned, there was much about the season that seemed inexplicable, as for example, the prodigal display made by plants of many kinds, and Roses in particular, we shall probably not be far wrong if we lay the credit for the comparative success of the Lily season to that brief spell of sunshine. At any rate, although the weather of August and September was all against them, Lilies made a brave show. From many parts of the country there have come reports of the exceptionally floriferous condition of L. auratum, and it is not a little curious that these reports concern newly-planted, imported bulbs as well as older plants. Now, none can believe that in the ordinary way a wet and cheerless season is favourable to the growth of L. auratum, and as in a general sense last year was the wettest and most cheerless for twenty years, we must look elsewhere for the underlying cause of the unusual display. Imported bulbs of L. auratum planted in early March can hardly have been materially influenced by the cold spring and, in the absence of any other known factor, we fall back on the July sun as materially responsible for the anomalous state of affairs.

Another Lily which seems to have found the excessive wet weather of last autumn to its liking is that shown in the supplementary plate accompanying the present issue, enlarged and reproduced from a photograph of L. centifolium in Lady Alice Shaw-Stewart's garden, at Ardgowan, last autumn. The same clump was illustrated in *The Gardeners' Chronicle* last year from a photograph (*Gard. Chron.*, January 12, 1924, Fig. 10, p. 23), taken in the autumn of 1923, and reference to that figure shows how the colony has prospered in the twelve months' interval. But that is no more wonderful than the progress of the Lily from the beginning, and its history, in Lady Alice Shaw-Stewart's own words, will be read with interest.

"The seed reached me from the Craven Nursery in July, 1915, as Farrer's No. 316 (L. longiflorum?), and was at once sown in boxes. In 1916 the remainder of our gardeners fit for service went to the war, and those who were left were barely sufficient for the cultivation of vegetables and fruit. Seeds of flowers had to take their chance, and this particular seed was no exception. In 1919 the seed boxes were gone over, and though, as was only to be expected, much had died, we managed to save a few things in the way of shrubs and herbaceous plants. We found only one Lily bulb in the box sown in 1915, and planted that in the herbaceous border in 1920. Next year it threw one weak stem with two blooms, and though in 1922 this had increased, it did not impress me at the time as anything exceptional. In the autumn of 1923, however, many stems made their appearance, the flower heads on the older stems were fine, and I realised that we had an exceptional plant to deal with."

At the time the 1923 photograph was taken the writer was unable to identify it as that of L. centifolium (Stapf), for the trumpet seemed too short and too narrow for that Lily, and the habit seemed different. That is only one more proof of the difficulty of the identification of plants photographed in a mass; but when a bulb, kindly placed at the writer's disposal by Lady Alice Shaw-Stewart, flowered last summer in Col. Hugh Warrender's garden, all doubt as to the identity of the Lily was removed.

In Dr. Stapf's view, certain differences between the Ardgowan Lily and the type plant of L. centifolium* are referable to fluctuation or to the crossing of different strains. As, however, Farrer saw but two specimens, and the Ardgowan Lily has been raised from seed he sent home, we may perhaps assume that, like L. Sargentiae, this Lily is not quite fixed in all its characters. Propagation by seed, however, should decide the point.

This must be an adaptable Lily, for the other well-known examples of it grow on chalk in Mr. F. Stern's garden on Highdown Hill, a spur of the Southdowns between Worthing and Arundel, where the climatic and cultural conditions are the opposite of those at Ardgowan. The average rainfall there is sixty-eight inches per annum, there is no lime in the soil, and the humidity of the west coast tempers the burning heat which is so noticeable a feature of the sun on the south coast.

During last summer it was pleasant to meet with a little colony of L. concolor raised from seed by Mr. Dykes, and thriving under his hand in the old garden of the John Innes Horticultural Institution at Merton, in soil which seems more nearly to approach that of the old private gardens in the neighbourhood of the Hague than any the writer has seen in this country. L. concolor is not often found in English gardens now, though in pre-war days the bulbs were so cheap that the species frequently made a temporary appearance in unexpected places, flowering from imported bulbs which, more often than not, died after flowering. They only ripened seeds in the garden in a hot summer, of which 1911 was an example, and it was usually necessary to send to Japan for seeds before a stock could be raised. The comparatively short life of the plant in this country may be due to its floriferous habit, which, as is so often the case with L. tenuifolium, probably throws a greater strain on the small bulb than it can support.

That old Lily, L. pomponium, is less often seen in gardens now than of old, and though they doubtless exist, the writer does not know of established colonies of it with more than a few plants. On the other hand, there are many gardens where solitary plants or small clumps of two or three bulbs have existed for a generation, the individual specimens varying their stature and flowering more profusely one year than another, seldom disappearing altogether, but on the other hand seldom increasing. All this seems to show that the species does not take readily to garden conditions, but that was not the case with the Lily known as L. pomponium verum, of which Mr. Amos Perry marketed bulbs about twenty years ago. This was a floriferous Lily of more robust habit than pomponium of gardens, and with larger flowers, of more perfect Turk's cap shape, and better colour. The writer had a fine colony of it in his garden for many years, but in a moment of weakness was moved to transplant the colony, and, as is so often the way, never saw it again. This Lily (L. pomponium verum) may be that referred to in the *Monograph of Lilium* (t. 46) as having been found by Mr. George Maw in the Lantosca valley of the Maritime Alps in 1873; but it does not seem to be thereabouts any longer, as Colonel Warrender, who searched the locality for it in the spring of 1924, could find no trace of any but the ordinary form of L. pomponium. The relationship of the latter plant to the red-flowered form of L. pyrenaicum has yet to suffer critical investigation, and it may be that the affinity will prove closer than is generally realised.

No new species of Lily has made an appearance during the year, but from Mr. John Williams, of Caerhays, have come bulbs received from Mr. George Forrest, of a Lily near L. nepalense; and as it is a floriferous plant of from four to five feet high, and is described by its finder, who is not prone to the use of superlatives, as "very fine," we may hope for a welcome addition to the L. nepalense phylum, of which little is known at present except from herbarium specimens. Mr. Reginald Farrer made it clear that the species is not confined to the uni-flowered specimen figured in the *Monograph* of Elwes. The type plant, for which the locality is Khatmandu, is apparently unique, for it has not been found in the neighbourhood again. The drawing Fitch made for the *Monograph* is copied from that in Wallich's *Plantae asiaticae rariores* (iii. p. 67, t. 291). It is of a trumpet Lily, and we are left in doubt as to whether the petals reflex with age or not. In the plants found by Mr. Farrer and Mr. Forrest there is no doubt as to the reflexing, and the Lily is revealed as one of the Martagon section (Fig. 24). The photograph was taken from a plant raised by Mr. R. F. Fitt, gardener to the Duke of Bedford at Endsleigh, from seed collected by Forrest.

The field note for this is as follows:—"15827, Lilium species. Shweli-Salween Divide, Lat. 25°20' N., about 9,000 feet. Plant 2-3 feet, white, flushed purple, rose exterior. Open, stony pasture. August, 1917."

Such experience as gardeners in this country have had of L. nepalense leads them to regard it as a greenhouse plant, but it is just possible that some of Mr. Forrest's specimens of this Lily may prove amenable to cultivation out-of-doors.

From Mr. Tse, of Hongkong, have come bulbs of L. longiflorum, which according to Bentham* is indigenous there, though it does not seem to have been reported from any other station in China. Curiously enough, Hongkong seems to be the sole station for L. Brownii.

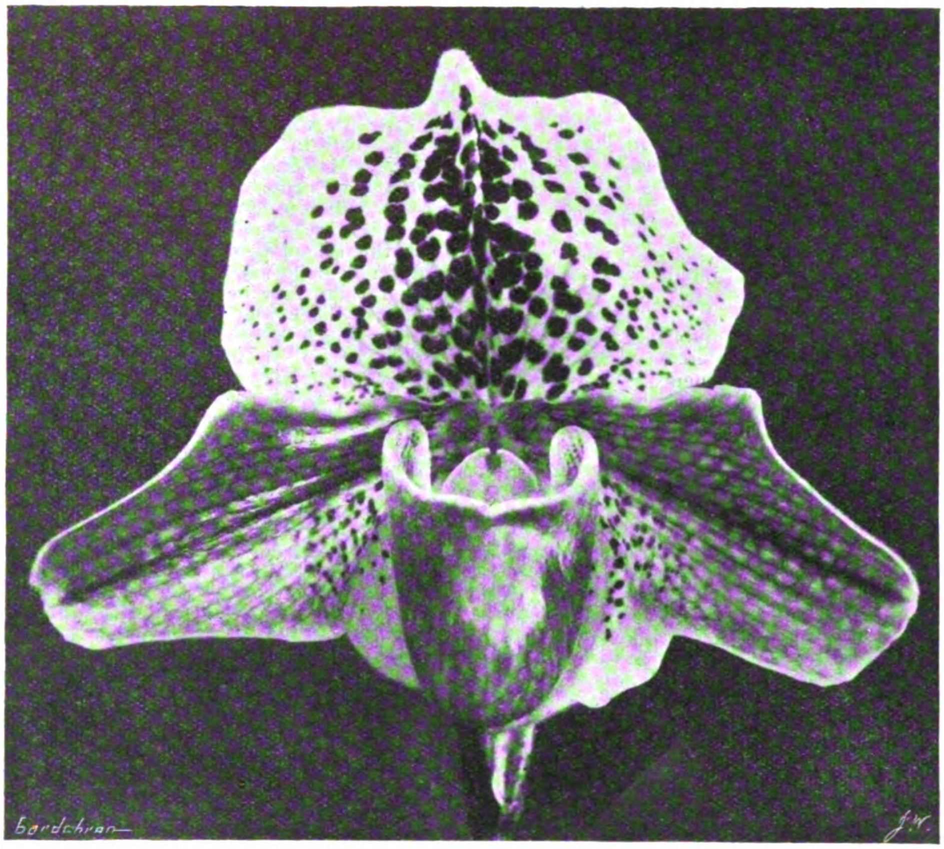

FIG. 25.—CYPRIPEDIUM WORSLEYI.

R.H.S. Award of Merit, January 13 (see p. 46).

A year seldom passes in which a new hybrid Lily does not appear, and 1924 has been no exception. But as a rule these things have a more or less meteoric existence, and it almost seems as if Nature had decreed that Lilium should be the one important genus to suffer no alteration at the hands of man. A hybrid between L. centifolium ♀ and L. myriophyllum ♂, of which the writer saw young plants in Mr. Bowles's garden in the autumn, may prove an exception to the rule, and it promises well.

The absence of sun in the autumn of the year and the deluge of rain in the first half of the present winter do not seem to promise well for Lilies in 1925. There can have been no ripening of the bulbs, as the process is ordinarily understood, any more than there can have been ripening of the wood of post-July flowering shrubs. But their experience of the season of 1924 will have confirmed gardeners in the wisdon of being prepared for anything. *A. Grove, January* 13, 1925.

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* *Bot. Mag.* tab. 8960

* *Flora Hongkongensis* (1861) p. 374

SCHOOL GARDENING.

A TRAVELLER by aeroplane and flying low over the country would see in the vicinity of many hundreds of elementary schools pieces of land divided up into school garden plots. If the flight were made during the spring or summer thousands of boys and girls could be seen planting, sowing, and tending their gardens, and for the most part happy, because in the garden the majority of them find congenial work.

Upwards of twenty years have passed since gardening was added to the curriculum of elementary schools. The object of school gardening, by the way, was not to make gardeners, though incidentally many boys have found their natural bent on the school plot. The idea was to develop powers of observation, to give reality to Nature study, to make boys skilful in the use of tools, and, what is very important, to make them feel that there is nothing *infra dig.* about manual labour. Perhaps the chief attraction about a school garden plot to the average boy is that it is his own; it is something that belongs to him, and gives scope for enterprise and individual effort. In this connection I remember once being in a school garden with the chief official of the County Education Authority. One boy had taken the trouble to edge his plot with stones delved from a neighbouring quarry, and as he talked the official in question thoughtlessly put his foot on one of the stones, making it loose in the ground. I saw one boy nudge another and glance anxiously at the moving stone, and then attracting the attention of the official he observed, quite respectfully, "I beg your pardon, sir, but would you mind taking your foot off that stone." This request, put by an anxious schoolboy, emphasises my point better than any argument I could put forward of my own.

It has been argued more than once that the average schoolmaster is not technically capable of teaching gardening, but everything depends on whether the teacher likes gardening himself. If so, nothing else matters; he and his class will learn together, and there is nothing more delightful and inspiring in education than to see a teacher and his pupils working out problems together, learning from their mistakes, and inquiring into the secrets of nature by means of simple experiments. The school garden offers great scope for these mutual investigations, and the lesson learnt is what every good gardener knows, namely, that if success is to be achieved, every cultural operation must be done well. There are instances, of course, in which results in the shape of crops are not satisfactory, and in such cases there is obviously something wrong, because you can never get good education out of bad gardening. In short, if the latter is not good the educational value falls short in proportion.

It is to the credit of many schoolmasters and the young people they teach that the gardening is amazingly good, and there are various ways and means of improving it. As an illustration of one of them, the Agricultural Education Committee of the Gloucestershire County Council inaugurated, before the war, an annual exhibition of produce in which special classes were provided for school gardens. I well remember those early days of the show and the puny efforts of the schoolboys. Sympathetic critics said that the vegetables shown were "as good as you could expect from boys," but the latter and their teachers were learning their lessons from the typical exhibition specimens staged by professional gardeners. A steady improvement has been observed, until now it is generally admitted that exhibits from school gardens are equal to the best in a splendid show, and on the last occasion the little village school of Maisemore, near Gloucester, staged Onions- grown on the school garden in the corner of a ploughed field- that would have taken a lot of beating in any first-class show.

The teachers do not grow the crops, but the boys themselves, with the teacher as the inspiration and guiding spirit. The school garden has helped to discover possibilities in children which a generation ago were never believed to exist, and when the process of education was one of driving in rather than drawing out

At the show in question there were little groups of boys, perhaps thirteen or fourteen years old, from schools up to twenty miles distant, not in the care of a teacher, but bringing in their produce themselves, and staging it correctly and tastefully. The boys honour the trust that is placed in them, and to my mind this evidence of self-reliance is one of the great triumphs of modern educational methods.

I observed at the beginning of this note that the object of school gardening was not vocational—to make gardeners—but incidentally this is what is being done. I do not mean that professional gardeners are being created in this way, but that school gardening brings out a love of gardening, and who can say to what extent the national growth of interest in horticulture which in my judgment is one of the few good things that have come out of the war—is due to the influence of the teaching of gardening in elementary schools. Let it be remembered that the school age is an impressionable age, and on a little plot of ground in a school garden there may be inculcated in a youthful mind the beginning of that love for horticulture which *The Gardeners' Chronicle* has done so much to foster since the days of Sir Joseph Paxton. *G. H. Hollingworth.*

INDOOR PLANTS.

HOYA CARNOSA.

HOYA CARNOSA is an old favourite, and has been cultivated in this country since 1802, in which year it was introduced from India. It is known as the Wax-flower, and is an ideal plant for clothing a damp wall in the stove, intermediate house, or even in the cool greenhouse. The plant will cling to the wall by means of aerial roots and will even grow or flower well in such a position without soil at the roots. Equal parts loam and peat mixed with broken bricks provide a good rooting-medium.

Cuttings form a ready means of propagation and good plants are quickly grown from them. The pinkish-white, wax-like flowers are yielded freely in summer, and they are produced on the old flower-stalks as well as on the young growths.

Disturbance at the root is resented by this plant, and an established specimen is better left to its own devices, even when the soil has become impoverished, for the aerial roots will give it sustenance and maintain it in good health. The flower possesses a pleasing, if faint, perfume. *Ralph E. Arnold.*

SOLANUM CAPSICASTRUM.

IN *Gard. Chron.*, January 10, p. 27, Mr. S. B. Dicks referred to the value of the Capsicum, or Pepper Plant as a table vegetable, and he also gave a list of sorts which would make good plants for growing in pots for decorative purposes. There are few plants more useful or interesting for their bright berries than a collection of well-grown and well-fruited Capsicums; they are invaluable for the conservatory, greenhouse, and house decoration during the winter, and the uses to which they may be put are many and varied. Being of a free and hardy nature they are not easily injured by long exposure in draughty rooms or corridors as are many tender plants at this season. They may be had in perfection about Christmas and the New Year, which makes them invaluable for various decorative purposes at that time.

Their culture is quite easy and simple. The required stock may be raised from seeds sown in February or March in gentle warmth, and when strong enough the seedlings may be potted singly in two-and-a-half inch pots. When established the points of the leading shoots should be pinched off to promote a bushy habit, and the pinching should be repeated once or twice during the early summer. Repot the plants as required, the final shift to be in 48, 40, or 32-sized receptacles, according to the strength of the individual specimen. When estabished the seedlings may be placed out-of-doors in a sunny position, plunged in ashes, from the end of May until the end of August. They should then be placed in a light, airy house or frame where the temperature is maintained at from 45 to 55 during the winter.

Care is necessary in watering the roots, especially in damp, dull weather. If the plants are infested with green fly or other insects the house should be fumigated lightly; a strong fumigant would cause the foliage to drop.

Propagation may also be effected by means of cuttings made of the young shoots. They should be inserted in pots filled with sandy soil, and placed in a warm frame or hand light with bottom heat. Propagation by cuttings is to be recommended if only for the purpose of perpetuating a good strain. Essential points in a desirable strain are robust growth and profusion of blossoms, followed by a good crop of large, bright berries.

The Solanum is not at all particular as to compost, but one that is fairly light, rich, and open suits the plants best. Specimens do well planted out, as they grow robustly and are less liable to attacks by insects than those in pots. By this method they are started in early spring in a genial temperature, and after duly hardening them they should be transferred to a rich plot of ground in the open, where they may remain until the autumn. At the approach of cold weather they should be placed indoors; if the soil is at all dry a liberal watering should be given two or three days before the plants are to be lifted, as then a good ball of soil will be retained around the roots.

Before commencing to pot the plants see that the receptacles are clean and dry, and drained efficiently. As regards the size of pots, the grower must be guided by the size and vigour of the plants, but on no account should they be too large or the soil will become sour before fresh roots have developed.

Water should be applied sparingly for the first few weeks after potting, but maintain healthy, growing conditions until the plants are re-established, shading and syringing them to keep them from flagging. A suitable position for the plants for a week or two after they are potted is a shady part of the greenhouse, or in a frame or pit. The tops of the shoots should be cut away at the point where the last berry is formed. This will divert the whole energy of the plant to the development of the berries that are already formed, as it is useless to expect later ones to come to perfection. When the plants are well established place them in a sunny part of the glasshouse, or, should they be required early in winter, they must be grown in a somewhat warmer temperature for a few weeks, but on no account should hard forcing be resorted to, otherwise the berries will drop prematurely.

The following sorts offer a good selection for pot culture:—Large-fruited kinds: Mammoth Red, Scarlet Beauty, Chinese Early Dwarf Red, Long Red, and Long Yellow. The smaller-fruiting kinds include Little Gem, Yellow Cherry, and Cayenne Red.

A good plan is to purchase the seeds from a reliable seedsman, and when the plants are in fruit select the best-habited and finest fruiting plants of robust growth. Save seeds from those selected, and also propagate them from cuttings.

Very few berried plants make a more interesting display during the winter than these Solanums. Keep them free from insect pests; they are liable to be infested with black and green aphis, red spider, and thrips. *John Heal, V.M.H.*

NOTICES OF BOOKS.

Year Books.

ANNUAL publications in the form of year books and directories, especially when prepared to be of service in a particular business, are among the handiest books of reference, provided their compilation has been carried out with care and foresight. Two such year books have reached us, and one entitled, *The Fruit-Grower Directory and Handbook*,* is a big one, running into nearly five hundred pages of text, the first hundred pages containing useful articles and general information likely to be of service to the fruit grower and market gardener. The remainder of the work is devoted to a list of names and addresses of those engaged in commercial horticulture, including fruit growers, market gardeners, salesmen, nurserymen, sundriesmen, fruit importers, and the like. The alphabetical list is followed by a classified section grouped under many headings, such as buyers and dealers, growers of flowers, fruit growers, seedsmen, etc.; there is also a section devoted to colonial growers, exporters, and others. Altogether this publication should prove of great value to the busy business man.

The other book is entitled *The Fruit, Flower, and Vegetable Trades' Year Book and Diary*, 1925,† and its differs from the preceding in that the major portion is devoted to a diary, the pages being set out for the six working days of the week and interleaved with blotting paper. There is also a mass of interesting information of a type which should make the publication a valuable desk companion to those engaged in the fruit, flower, and vegetable trades.

My Garden Book.

THE qualifications required by a writer of a gardening book planned to deal with every aspect and phase of horticulture are many. He has to combine the functions of botanist and plant pathologist, and possess a wide knowledge of plant cultivation, and even then, with this storehouse of information, he must so blend his material that what is written is readily assimilated by the reader.

Mr. J. Weathers, the author of the book before us‡ has a wide acquaintance with gardening, having had, as we are informed in the preface, "Over forty years of daily experience in practical, scientific, commercial and journalistic horticulture"; the book is the outcome of this experience, and in matter and scope, we believe it to be one of the most comprehensive that has ever been written. Those who know a former work by this author—*A Practical Guide to Garden Plants*, a volume which to many has been and is still a standard work of reference, but now, unfortunately, out of print—will readily understand the pains required to produce a volume of that type, and the new work is prepared with equal care. In many respects *My Garden Book* has been written on much the same lines as the older book; in fact, the typescript in many instances is the same, except that addition or substraction of matter has been made to bring the information more up-to-date. The arrangement is planned differently, yet all those who are fortunate to have the older book at hand need not, we think, trouble to buy the one now under review, for the likeness is so pronounced that the author and publisher would have been well advised to have retained the title of the older work and have brought out the new book as a revised edition. The title, *My Garden Book*, conveys little meaning as to the nature of its contents, and it is because of this change of names and the fact that *A Practical Guide to Garden Plants* was a recognised standard work that we doubt if the volume will receive the reception it deserves.

It is difficult to do full justice to a book of this description. It is divided into six parts, by far the largest being the one devoted to the hardy flower garden, which runs into three hundred and twenty-one pages of double-column text, and treats of annuals, biennials, perennials, bulbs, Roses, trees and shrubs, and a host of other subjects. There is also a part which relates to "Garden and Garden-making," under which heading the science of plants and soils is included. Other sections deal with glasshouse gardening, the fruit garden, and the vegetable garden. Altogether there are seven hundred and forty-four pages of double-column text, including an index. The illustrations, line and photographic, number no fewer than three hundred and ninety-two. There are also two-dozen full-page coloured plates, which are poor and, indeed, seem out of place in a work of this nature. Nevertheless, *My Garden Book* will prove a very desirable companion where a book of reference is required, for the information is to be relied upon, and the ground which it covers is wide. To a plant lover who is his own craftsman it will be as useful as to those who depend upon gardening for their livelihood.

CULTURAL MEMORANDA.

EARLY TOMATOS.

EARLY in the new year is a suitable time for sowing Tomato seeds for an early crop, where Tomatos are required in quantity from the beginning of June onwards. Plants retained from the previous year, and grown in comfortable quarters during the whole of the winter and spring and well into the following summer, have not the same vigour as those raised from seeds early in the year, and very often fail when Tomatos are most needed, viz., when hot weather sets in, while plants that commence ripening fruits early in June will produce an abundant crop over several succeeding months.

The temperature of a Cucumber house is needed, and from the time the seedlings show through the surface of the soil they should be grown in a light position near the roof-glass. So soon as the rough leaves have formed, pot the seedlings, taking care that the pots and soil used are thoroughly warmed to the temperature of the house in which the plants are growing. Small thumb pots are the best for the first potting, and the plants should be watered, but not too copiously, for at this stage they are very prone to damping off. So soon as the roots reach the sides of the pots a shift is necessary into receptacles two or three sizes larger, but at this early season it is not well to place them in receptacles which take up much room. At this potting the young plants should be supported with small sticks, and if a bed with bottom heat is available, such as where Cucumbers are to be planted, this would be an excellent position for a week or two, by which time abundance of heat may be had in positions that would not have been favourable earlier.

If the position in which the plants are to be fruited is not ready for their reception, and the plants have filled their pots with roots, they should again be shifted into others of a larger size.

Tomatos should be planted, say, as soon after the beginning of March as possible, and they should be permanently staked from the commencement. My method is to put the stakes in position before planting out, and to make a hole near the side of the stake for the reception of the plant, and support it at once with a tie or two of raffia.

Good fibrous loam mixed with a little leaf-mould or well-decayed manure, and sufficient sand to render the compost open and porous, provides a suitable medium for the potting of the young plants. The secret is to start with dwarf, sturdy specimens and to grow them strongly afterwards. They should be exposed fully to the light, and a little air admitted during bright weather. Provide a firm, retentive soil, and apply water carefully until the fruits are set, using fire heat with moderation. If the atmosphere be kept moderately dry the plants will make firm growth and the fruits set freely. Allowing the plants to become so dry at their roots as to cause them to flag during the time they are in flower cannot be too strongly condemned.

There are many good sorts of Tomatos, including Sunrise, Duke of York, Best of All, Perfection, and Kondine Red. *James A. Paice.*

PUBLIC PARKS AND GARDENS.

MR. HOPE JOHNSTONE, of Annandale, having presented a field to the Moffat Town Council for a public park, has, at the request of the Council, agreed that it should be called the "Hope-Johnstone Park." At a recent meeting the Town Council decided to consult an expert gardener regarding laying-out the park.

AT a recent meeting of the Town Council of Paisley it was reported that the yachting pond formed in the Parshaw Park, constructed largely for the purpose of providing employment, had cost £3,063. The grant from the Unemployment Grants Committee was £1,500, which left a balance of £1,563. This has been paid by Mr. Will Bow, a Paisley gentleman, who has already made generous gifts to the burgh, so that there will be no cost to the ratepayers for this valuable addition to the attractions of the Parshaw Park.

THE Town Clerk of Bury has been authorised to make application to the Ministry of Health for sanction to borrow £3,850, the estimated cost of the lay-out of land at Clarence Recreation Ground.

HARD Tennis courts are to be provided in St. Ann's Well Gardens, Hove.

THE sanction of the Ministry of Health has been received for the borrowing of £3,025 for the purchase of land on Anlaby Road for park purposes.

THE Corporation of Liverpool has applied for sanction to borrow £145,000 for the purchase of 452 acres of land for the provision of a municipal golf course, more playgrounds for the children, and allotments

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* *The Fruit Grower Directory and Handbook*, 1925. Benn Bros., Ltd., 8, Bouverie Street, E.C. Price 10s. net.

† *The Fruit, Flower, and Vegetable Trades' Year Book and Diary*, 1925. The Lockwood Press, 1, Mitre Court, Fleet Street, E.C. Price 2s. net.

‡ *My Garden Book*. By John Weathers. Pp. 774, with twenty-four coloured plates and illustrations in black and white. Longmans, Green and Co., 39, Paternoster Row, E.C. 4. Price, 36/- net.

GOVERNMENT BOTANIC GARDENS.[*]

(*Continued from page* 39.)

These changes in the scope of plant-study have affected workers in botanic gardens as greatly as they have affected those whose investigations are conducted in the field, the cabinet, or the laboratory. In spite of this it sometimes appears, to those unfamiliar with what botanic gardens do, that there has been less modification in botanic garden methods than in laboratory or cabinet-practice. Appearances are at times misleading; the misapprehension in this case is one of the consequences of incomplete observation. Workers in a botanic garden are subject to influences that hardly affect those privileged to labour in the field, the cabinet, or the laboratory. The *field*-botanist is free to confine his attention to the philosophy of plant distribution or to that of plant-association, as he may decide. The cabinet-worker may devote his energies to the study of the characters, or the qualities, or both, of a single natural group of living organisms; the laboratory student may concentrate his attention on the solution of definite morphological or physiological problems. But the garden-worker who deals with taxonomic problems has to use them as means to practical ends. The botanic garden-worker realises that the somewhat arrogant nineteenth century distinction between "scientific" and "systematic" botany is only a rather ungracious variant of the more refined eighteenth century objection to "botany"—the science of "knowing plants" as an occupation which "amuses the fancy and exercises the memory without improving the mind or adding to real knowledge." The botanic garden-worker is aware that when, in the field or the cabinet, "system" is treated as an end in itself, this objection may be valid. But the botanic garden-worker, being a "phytologist" as well as a "botanist," knows that without system it is not possible to carry out that part of his duty which involves the making of natural knowledge available to industry and commerce.

Towards the results of laboratory-research the attitude of the botanic garden resembles that maintained towards cabinet-study. When applying the physiological knowledge gained by the laboratory worker, whether in relation to health or disease, and whether on the nutritive or the reproductive side, the worker in a botanic garden remains interested in the morphological bearings of his investigation, and makes himself as conversant with the characters and qualities of the plants employed as if he were an herbarium or a museum-student.

To this freedom to concentrate attention on particular problems or particular aspects of problems, the success of work in the laboratory, the cabinet and the field is often due. But if the necessity to retain old as well as to adopt and apply new methods, which work in a botanic garden involves, may at times seem to possess certain extrinsic drawbacks, it has also some intrinsic advantages. It permits, among other things, a continuity of interest and effort that need not be limited to the lifetime of the individual worker, and need not disappear with the dominance of a particular phase of botanical thought.

One influence to which this continuity is to some extent due, is that exercised on botany by gardencraft, whose aid is essential to the management of a botanic garden. It is this feature which explains the idea that a botanic garden must serve the purposes of horticulture. Yet it is this feature which enables us, on further thought, to realise that this idea, so often entertained, must be the converse of reality. There is, no doubt, in any botanic garden an intimate alliance between botany and gardencraft. But a botanic garden is not, on that account, an institution in which botany professes to demonstrate how plants should be grown; it is a place where gardencraft assists botany to increase natural knowledge.

The tendency to confuse a botanic garden with a public park is more intimately connected with our modern and popular conception of a "garden." We are apt to forget that this term, shorn of accidental associations, means no more than an enclosure which shelters cultivated plants. We are tempted to think of a "garden" as did that great Lord Chancellor who remarked with truth, three hundred years ago, that "to garden finely" was a perfection "reserved for ages grown to civility and elegancie." The "garden" Bacon had in mind is an enclosure which, while affording protection to the plants contained, promises its owner and his friends intellectual pleasure and artistic satisfaction. So remote is this conception from the original one, yet so widely does it prevail, that when national needs, begotten of war conditions, called for a reversion to primitive practice, a new name had to be found for an old thing. The "allotment," which reiterates the uncivil and inelegant precept that man must eat his bread in the sweat of his face, reminds us that the original purpose of the "garden-close" was severely economic; that it was meant to provide for man's bodily welfare, without making any offer of mental refreshment or any appeal to aesthetic feeling. Those familiar with tropical conditions recognise in the "allotment" a return, dictated by necessity, to that undifferentiated husbandry characteristic of hot countries with a maritime or a monsoon climate, where the plough has not yet supplanted the hoe.

In one respect the "allotment," though possibly more perfect, is perhaps less complete than the tilled enclosure in which no distinction can be drawn between the "field" and the "yard." The primitive enclosure served a double purpose; it ministered to the sound by providing much of what the husbandman could eat and some portion of what he might wear; it tried to serve the sick by supplying what it was thought could mitigate pain, and what, it was hoped, might cure disease. The disappearance of domestic remedies from modern enclosures is not, however, a direct result of the prehistoric specalisation which led to the evolution of the "medicine-man," who found his prestige enhanced when he could supplement and in time replace the familiar "simples" of his tribe by drugs collected afield and in secret, under favourable planetary conjunctions and during suitable phases of the moon. Our neglect of these plants is perhaps more immediately traceable to that modification of outlook which led many of the northern races of Europe to regard with some suspicion matters in any way connected with the Church of Rome.

The Latins, whose interests were largely economic, and whose curiosity did not always extend beyond the practical, classified the plants they cultivated or put to economic use in accordance with their qualities. This grouping was accepted by renaissance students, and among the groups thus recognised, those that chiefly concern us now were the "esculent," the "medicinal," the "coronary," the "aromatic." The group of "medicinal plants" included the sources of mediaeval domestic remedies plants rarely grown in modern northern gardens. They were, perhaps, hardly more familiar in classical gardens than in ours. Though medicinal plants are discussed by authors like Dioscorides and Pliny, the exploitation of the drugs they yielded was largely left, in classical days, to specialists who were often accused of witchcraft and sometimes suspected of murder. In this connection the advent of a Levantine faith, whose influence grew as that of classical "civility and elegancie" decayed, did rather more than banish dark beliefs which cultured paganism was content to entertain. If the laity in the middle ages showed a disposition to abide by this pagan habit, the early church set its face against it and reverted to the practice of growing homely remedies. The original undifferentiated "tilled enclosure" had harboured, along with the rudiments of horticulture and of agriculture, also the germ of medicine, and thereby inspired the formation of the "herbularies" that, in the oldest of monastic establishments, found a place alongside the plots in which the brethren grew their legumes and their fruits. By a simple and easy transition the monastic "herbulary" devoloped into the "physic garden" characteristic of the medical schools attached to the Universities that sprang up so freely after the fall of Byzantium and the consequent revival of learning in Western Europe.

(*To be continued.*)

COB-NUTS AND FILBERTS.

Of the two dozen or so known varieties of Cob-nuts and Filberts, the grower can limit his choice to half-a-dozen sorts; in fact, about four varieties may prove as profitable as the many.

Having had an experience in my early career with about fourteen varieties of nuts, I should in future restrict my efforts to the following four sorts:—Kentish Cob (syn. Lambert Filbert), Pearson's Prolific, Cosford, and Kentish Filbert.

Kentish Cob has a husk nearly smooth and longer than the nut. The nut is over an inch long and nearly an inch wide, oblong, and slightly compressed. Large quantities of Cob Nuts are grown for market and some seasons the nut plantations are very profitable, although on the whole the growing of nuts is very speculative. Hogg states that this is probably the best of all the nuts of the Cob-nut and Filbert type and may be kept for so long as four years. The tree is a prolific bearer, when grown near Pearson's Prolific, this latter variety being productive of a large crop of catkins.

Cosford is an excellent Nut and a great bearer. The husk is hairy, finely and deeply cut. The Nut is large, ovate, inclining to oblong, with thin shell striated with darker brown. The kernel is large and of a rich flavour.

Kentish Filbert is a variety of great antiquity, and most productive when planted with a catkin-bearer, say, one to six or nine trees, as one male bush will fertilise the remainder when intermixed in the rows. The nut is long and pointed; the kernel very rich and sweet. This Nut has been grown in Kent for a long period, nevertheless its cultivation still continues.

Pearson's Prolific is a variety noted for its usefulness as a pollinator as well as for its abundant crops. The husk is hairy and shorter than the nut, which is of medium size, obtusely ovate or round. The shell is rather thick. The kernel is full and of good flavour. Young trees crop early and abundantly, even small bushes not exceeding three feet in height are sometimes laden with nuts. This variety does well in almost any situation without much attention; therefore, it is useful for planting in odd corners and out-of-the-way places. *Pomona.*

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[*] The Sir George Birdwood Memorial Lecture, delivered before the Royal Society of Arts (Indian Section), on Friday, January 9, 1925, by Lt-Col. Sir David Prain, C.M.G., C.I.E., LL.D., F.L.S., F.R.S., late Director of the Royal Botanic Gardens, Kew.

VEGETABLE GARDEN.

HERBS.

(*Continued from page* 44.)

CARAWAY is too well known to need describing, but I wonder what number of gardeners would recognise the plant growing. It is more frequently employed in this country than Coriander, and both are very much more used on the Continent than here. In Germany, in particular, there is hardly a dish either savoury or sweet, that one or both do not enter into it, and the delicate flavour which the Caraway seed imparts to the famous German liqueur "Kümmel" is well known by travellers on the Continent: further, without Caraway, there could hardly be "Sauerkraut."

Anise flowers and goes to seed rapidly and is well known because one hears so much of Aniseed, as it is called, both in physic and drag-hunts. Our nine most useful perennial herbs are: Mint, Sage, Common Thyme, Lemon Thyme, Winter Savoury, Pot Marjoram, Tarragon, Fennel and Sorrel. Besides these there are two others we should include in the herb garden, viz., Sweet Cicely and Alecost: although both have practically fallen out of use in our time they are well worth growing. Mint, or rather the Mints, for there are no fewer than ten distinct varieties, are amongst the most important of perennial herbs. If asked to enumerate them I should give:—Spearmint—Mentha viridis; Cornmint—M. arvensis; Horsemint—M. sylvestris; Round-leafed Mint—M. rotundifolia; Lemonmint—M. citrata; Curly-leafed Mint—M. crispus; Peppermint—M. piperita; Watermint—M. aquatica; Pennyroyal—M. Pulegium and Catmint—Nepeta Mussinii; all of which are useful but all are not suitable for the table. Spearmint is grown as a matter of course in every garden. It is too well known to need description, but I wonder if it is realised how wholesome it is when taken as a condiment with roast lamb. "With bitter herbs shalt thou eat it" is a very old edict, and when we eat this homely herb what a link it is with the long, long past.

Cornmint is said to have the power of preventing milk from curdling, and this anti-curdling property of Mint may be the secret of its success in medicine. Mints are largely used in the prescriptions of modern doctors, Peppermint for grown-ups and Spearmint, being milder, for children. Peppermint is one of the most popular herbs in the garden and probably also one of the most useful. If people only knew how good the fresh green leaves are when bruised and laid upon the aching part to cure nervous headache, the plant would be liked even better than it is. It is also responsible for that comparatively modern comfort, Menthol.

Watermint, the commonest of our English Mints, is often spoken of as Wild Peppermint, and it has much the same smell and properties. It is remarkable that such water-loving plants as Mints should be aromatic for, as a rule, aromatic plants belong to hot, dry places.

Pennyroyal grows quite differently from the other Mints. It creeps about close to the ground and in hot countries is thought to be a protection from mosquitoes. In Elizabethan days the herb was thought worthy of a place in the posies that were given and accepted by true lovers. Catmint is very different to the other Mints and besides being a pot-herb is a very valuable decorative plant. Unlike most of the other Mints also, Catmint does not demand moisture; it will grow on heaths and uplands, and make itself quite happy in the rock-garden.

Sage will grow anywhere and is one of the few herbs that still belong to modern everyday life. "How can a man die who has Sage in his garden" is an Arabian proverb. "He that would live for aye must eat of Sage in May" is an English one. They show how the herb has been valued East and West. The Chinese cannot understand why Europeans like their Tea-leaves better than home-grown Sage leaves for brewing, and time was when exchanges were made between the Dutch and Chinese—four pounds of Tea for one pound of Sage. Meadow or Wild Sage, seldom seen in gardens now-a-days, is known about the countryside as Clary or Clear-eyes, and at one time was as much valued as the garden kind.

The Thymes include the fragrant Lemon Thyme; Common Thyme that grows on heath and down, making the softest carpet; the lovely dwarf mountain Thyme, that creeps over stone, and the golden and silver Thymes. Their culture is very easy; cuttings strike readily if inserted in August, and seeds germinate and soon make sturdy plants if sown in the spring.

Winter Savoury will also grow from cuttings or seeds, and in soil that suits it soon makes a good-sized shrub. In very rich soils it sometimes grows too freely and succumbs to the severity of our winters.

Pot Marjoram is a lovely plant which, if seen in the mass, is not easily forgotten. It spreads rapidly, and besides being worthy of a place in the herb garden, is excellent for growing in a border in the kitchen garden.

Tarragon is another herb that loves warmth and sunshine and is absolutely essential for that kitchen necessity, *Vinaigre d'Estragon*. If the cook is in the habit of paying visits to the herb garden, however, it is wise to caution her that the taste is strong and peculiar, and if a chance leaf finds its way into the bunch of sweet herbs used for soup, great consternation will result at the dinner table.

Fennel was at one time in great demand for the making of Fennel sauce. Few herb gardens include it, and it is seldom seen in the kitchen garden, yet in the time of Edward I. it was consumed by nearly every household.

Sorrel is so much of a vegetable in appearance that one wonders why it should be reckoned as a herb and relegated to the herb garden. The large French Sorrel is the best for eating, as it is less acid than the common variety. When Apples are not available for Apple sauce, Sorrel leaves are a good substitute.

Sweet Cicely is a herb of the past, yet it is surprising to learn that its leaves were at one time liked in salads. The flavour is strongly paregoric, and the same scent is very pronounced if the leaf is crushed.

Alecost is another herb that is seldom seen or heard of in these days. It greatly resembles Mint in smell and taste, although it is not in the least related to it.

Wormwood, Rue, Camomile, Horehound and Tansy are bitter herbs indeed, but no herb garden would be complete without them.

Wormwood is, with the exception of Rue, the bitterest herb known, but everyone must look on it with interest if only because of its responsibility for the world famous absinthe. In France, whole fields of it are grown for no other object than the making of this cordial. The plant is not really poisonous, but very wholesome and makes splendid bitters.

Rue is a herb with beautiful, soft, bluish-green foliage. Cattle owners and poultry keepers are well aware of its value as a homely physic, and many of our country folk still use it as a medicine.

Camomile has quite a different character, its value being in its flowers. It is extraordinary that nowadays Camomile should be so little valued. On the Continent nearly every household has its tin of dried Camomile flower-heads, and Camomile tea sweetened with honey is the commonest remedy for colds.

Horehound is bitter, with quite a different bitterness, and in many country places Horehound beer is brewed and drunk. Syrup of Horehound is also good for coughs and colds.

Tansy, perhaps the least bitter of the bitter herbs, is still bitter enough. It yields a valuable oil which might be used much more commonly than it is. It is somewhat of a vagrant and needs watching in the herb garden or it will soon appropriate space which is meant for other plants.

Bulbous plants that are admitted to the herb garden are not numerous. They include Chives, Allium Schaenoprasum; Squills, Urginea maritima; the true Saffron, Crocus vernus; and the Meadow Saffron, Colchicum autumnale. It is only the green, spiky leaves of Chives that are used, and their great delicacy of flavour makes them invaluable in cookery.

Squills, that charming wild flower that is sometimes, though seldom, found wild is well worth a place in the herb garden. It is appreciated for its lovely blue blossoms, but it must also be remembered that it has a use as a physic.

The true Saffron may be allowed a place in the modern herb garden merely on sufferance, but the old herbalists held it in the highest esteem.

The Meadow Saffron, so-called, though really this is a misnomer, is a native plant that needs sandy soil and perfect drainage. The bulb provides the well-known and powerful medicine called colchicum, which as a physic for gout and rheumatism has long been used in England and France.

It is difficult to see how a distinct line can be drawn between herbs and other plants, because so many beautiful plants are sweet-scented, and also good for meat and medicine, but we should endeavour to make the herb garden beautiful and attractive as well as a utility garden. Therefore, I should like to suggest half-a-dozen plants that are essentially border plants and, because of their brilliant colours, very attractive. They are Valerian—Valeriana officinalis; Hyssop—Hyssopus officinalis; Mallow—Althaea officinalis; Chicory—Cichorium Intybus; Bergamot—Monarda didyma; Sweet Woodruff—Asperula odorata, and the little annual blue Woodruff.

Valerian is well known as a highly decorative plant, and is attractive everywhere, but probably few realise that it is also of great value in allaying pain and promoting sleep. It is also strongly nervine without any narcotic effect.

Hyssop is a handsome evergreen shrub, and along with Catmint, already mentioned, makes a charming study in soft, indistinct blues. In olden days it appears to have been used for broths and decoctions, but I have never been asked for it as a herb.

Mallows are as useful as they are pretty, and their leaves and sap are full of virtue. It is one of the ingredients for the homely *Tisane de quatre fleurs* so beloved by our French *confrères*, and makes one of the pleasantest remedies for colds. *W. Auton.*

(*To be concluded*).

PEA BEDFORD CHAMPION.

I RECOMMEND growers to include the variety Bedford Champion in the list of Peas they cultivate this season. After exhaustive trials with other standard early varieties, I consider Bedford Champion one of the best sorts and one that will give great satisfaction to market growers as well as to the private gardener.

The qualities of this fine Pea include a robust constitution capable of resisting mildew and prolific cropping. The large pods are well filled with nine to eleven peas of very rich flavour. *A. W. Pullin Turvey House Gardens, Bedford.*

HOME CORRESPONDENCE.

Perpetual-flowering Carnations.—I am obliged to Mr. A. T. Harrison for his generous comments (*Gard. Chron.*, January 3) on my article on perpetual-flowering Carnations which appeared in your issue of December 13, 1924, and I quite agree with his observations regarding the variety Britannia. This has the best habit of any variety I know, and a batch of plants always delight the eye, but the blooms are disappointing in size, although very freely produced. The varieties Edward Allwood and Lord Lambourne are far superior in size, and the former perfect in shape, very free, but rather a thin grower. However, it stands up well and is not a weak grower; its flowers also come a good colour in winter. I should like other growers' opinions on Peerless. It has flowers of fine colour and is a good grower, but nearly every calyx splits in winter, and the blooms come one-sided. R. F. Felton is hard to beat for a private garden, being a strong, healthy grower and needs little support. No doubt some stocks of certain varieties are superior to others, and nothing is gained by propagating from a poor plant. *R. Gardner, Heywood Gardens, Cobham.*

Onion Cranston's Excelsior v. Ailsa Craig.—Like your correspondent Mr. A. T. Harrison, I should be glad if some one who worked in the gardens at Culzean Castle under the late Mr. David Murray at the time he first introduced Ailsa Craig Onion would give his opinion of this famous Onion: the origin of which has been challenged by your contributor, *Pomona*. The first time I saw the late Mr. Murray exhibit was at the Edinburgh Autumn show, held in the Waverley Market, exactly thirty-three years ago. I remember the exhibit caused quite a sensation at the time, and the like had never been seen before. Your correspondent, *Pomona*, states that this Onion was first introduced into this country some twenty-five years ago, and goes on to remark it was grown at Ailsa Craig. I lived many years ago almost within sight of this famous rock, Ailsa Craig, and if my memory serves me rightly, it is inhabited only by wildfowl, and stands at a great height some miles out in the sea. No doubt when the late Mr. David Murray decided to choose the name Ailsa Craig, he had in his mind the towering globular shape of the rock, which I consider is an excellent name for this very popular Onion. *J. A. Kirkwood, Sutton Place Gardens, Guildford.*

The late Mr. D. Melville.—The following particulars in the late Mr. D. Melville's own handwriting are of interest as showing the different places in which he served (see p. 16) and the dates on which he entered and left these particular establishments:—Mountgrahame, entered November, 1859, left November, 1862; Cambo, entered November, 1862, left November 1865; Trentham, entered November, 1865, left November, 1867; Bellegrove, entered, November, 1867, left February, 1869; Paris, Jardin de la Ville, entered March, 1869, left August, 1869; London, James Veitch and Sons, entered August, 1869; Oteley Park, entered March, 1870, left August, 1873; Dunrobin, entered September, 1873. *R. M.*

Sowing Mistletoe.—Your correspondent, *Pomona*, on page 435 (Vol. LXXVI) suggests a method of sowing Mistleto which is both unnecessary and fraught with danger to the tree. A much simpler plan, and equally as successful, is to proceed as follows:—First thoroughly sponge the underside of a bough of an Apple tree so as to remove all Moss or other growth for an area of two or three square inches. Then take a berry of the Mistleto and burst it by pressure upon the surface of the cleansed bark; the mucilaginous material will gum the seeds quite readily. There is no need to break the bark in any way; the germination of the seeds and the entry of their "roots"—like two probosci—into the bark is highly interesting. *Harry Williams, Redruth.*

Do Bees Pollinate Apple Blossom.—Your correspondent (Vol. LXXVI. p. 424) affirms that his friend, who is also a grower, stated definitely that bees do not "work" his Apple blossoms, although they pay good attention to his Plums, Peaches, etc. I do not doubt his statement in the slightest, but my own experience is quite the contrary. In 1920 bees were introduced to plantations of fruit of which I had charge, solely for the benefit of Plums which were growing in soil overlying a cold, clayey subsoil, and consequently making gross wood at the expense of fruit buds. It was thought that the bees would pollinate the Plum blossom (not my own opinion by the way), and instead of the blossoms failing to set would produce a crop of Plums and assist the trees to find their equilibrium. The result was interesting The bees worked amongst the Peaches, Cherries, Apples, and small fruts, which all bore excellent crops, but never even a wayfaring bee could be found on the Plum blossom. As many as twenty-two hives were introduced, so an ample population of bees was available for a-hunting for supplies of nectar. This made me form an opinion, which, as a lover of bees, I should like to have confirmed or contradicted by old and experienced bee-keepers, that is, that where fruit trees of any description are growing in unsuitable soil or under adverse conditions generally, the perfect flower containing the pollen necessary for fertilising is not produced, nor are such flowers sufficient to attract the bees to gather from them for comb-building or feeding purposes. If this is true, then bees are of no assistance to the fruit-grower as a fertilising agency, as their efforts on trees in happy circumstances would only necessitate needless labour and expense in thinning to produce first-class produce. In some cases bees will leave entirely alone trees which they have previously "worked," after the use of obnoxious-smelling winter sprays, and maybe this is why the reverend gentleman has never seen bees amongst his Apples. *H. Crowe, Dingley Hall Gardens, Market Harborough, Leicestershire.*

The Orchid Club.—As your kindly references to the Orchid Club (pp. 1 and 6) may engender some misapprehension of the real constitution and significance of this association, I beg your courtesy for the following résumé. It is not a Manchester Society; it is an association of amateurs, already some thirty in number, scattered throughout an area ranging from Northumberland to Gloucestershire and to Kent. The idea of such an association of amateurs interested in Orchid culture is not of recent origin, but it has been tentatively discussed for some years, and at one time it was hoped that the idea might germinate in London, but practical difficulties proved discouraging, and eventually it was decided that the association should see the light of day in the North, and Manchester was chosen as its birthplace, because Manchester is a centre about which amateur Orchid growers are more numerous than about any other, and because there is in the University of Manchester a botanical school of great scientific eminence and practical utility from which help and encouragement were readily forthcoming. The objects for which the Club was founded are, briefly, to promote good fellowship among amateurs by enabling them to meet and become acquainted on common ground; and to promote the investigation of the many interesting problems of cultivation, hybridisation, and germination, as well as the systematic study of the various genera. In this latter object the Club has been fortunate in enlisting the sympathetic and practical co-operation of the most eminent scientists in the country. I may add that various problems are already under investigation, and that the late Dr. Hartley, whose untimely death is an irreparable loss, had worked out many points in cultivation and had carried them to a successful practical issue as he demonstrated at a very memorable meeting of the Club in our first session. The Orchid Club is thus supplementary to those pre-existing societies which are all-sufficient for some, but which do not suffice all of us. The members of the Orchid Club appreciate your kind Editorial wishes, and they realise that the prosperity of the Club will be measured by the extent to which a genuine and inquiring enthusiasm for Orchid culture can be created. There are already indications that the objects of the Orchid Club are making an appeal in other centres than this, and that offsets will eventually mature, and even in London hope has not been wholly abandoned. *Bertram J. Beckton, Hon. Sec., Daisy Bank, Irlam-o'-th'-Heights, Manchester.*

[Mr. Beckton has taken our reference to "Manchester Societies" too literally, but we do not regret his discovery of an unintentional local inference, inasmuch as it has brought the foregoing interesting communication.—Eds.]

Apple Cox's Orange Pippin.—I have grown Cox's Orange Pippin in the south, in Worcestershire, in Yorkshire, and now here in Lancaster I have been most successful this year, but I have always found that this variety needs more assistance than the majority of other kinds. I have improved on the treatment of this Apple for some years, and I find that without assistance the crops are generally poor, and the defoliation of the tree occurs much earlier than it should be, which tends to weaken the buds for the coming season. The following treatment I have proved to be most successsful. When the trees are dormant dust them with fine lime, spreading it all over the head of the tree, just after rain. Then dig around the trunk of the tree for an area of about two feet six inches, working the soil some eight inches deep. Cover the soil with a moderate dressing of equal parts lime and kainit. After an interval of four weeks mulch the trees with old cow manure and horse droppings mixed with soot. This treatment will invigorate and strengthen the surface roots. *W. Osborne, Lancaster.*

—— Mr. Carpenter's enquiry as to the cause of the unhealthy condition of his Cox's Orange Pippin Apple trees opens a very interesting discussion. Undoubtedly the reasons are to be traced to more than one factor, including stagnation at the root surroundings, aphis attacks, a cold aspect, impoverished soil conditions, and all-round seasonable neglect. Stagnation at the roots is very inimical to this variety, for efficient drainage is essential to the well-being of this popular Apple even more than for any other variety. The past year was one of the wettest known for several seasons, and trees grown on a sub-strata of gravel or chalk would suffer in health considerably more than trees growing in a deep, well-drained, loamy soil. My practice has always been to add charcoal and flowers of sulphur to the compost at planting time, as these materials will counteract somewhat the effects of wet conditions of the soil, and with a surface dressing of lime, will neutralise soil acidity. Impoverished soil conditions are often the reason of unhealthy trees and loss of crop. In such cases the soil should be enriched with manures containing potash, nitrogen, phosphates, and iron. Lime, which is not only a plant food, acts indirectly by improving the condition of the soil, and in rendering soluble and setting free other plant foods. The following winter dressing may be given to established trees: two ounces of basic slag, one ounce of sulphate of potash, one to two ounces of nitrate of soda, to each square yard of surface around the tree. Lightly fork these materials in the soil, then apply a dressing of slaked lime. *Pomona.*

SOCIETIES.

NATIONAL ROSE.

ANNUAL GENERAL MEETING.

JANUARY 13.—As stated on p. 32 in last week's issue, the Annual General Meeting of the National Rose Society, which was held on this date at the Caxton Hall, Westminster, was eminently satisfactory in every respect. The attendance was larger than usual and everyone seemed to be keenly interested in the proceedings. At the commencement the retiring President, Mr. Sidney F. Jackson, was in the chair, and, in view of the unusually large amount of business to be transacted, it was agreed to take the minutes of the previous annual meeting and the Council's Report for 1924 as read.

In proposing the adoption of the report the President briefly referred to the gratifying large increase in the Society's membership and to the most satisfactory state of the finances. Including those who have joined since the report was written, the membership is now almost twelve thousand. Mr. H. Oppenheimer seconded the motion, which was carried unanimously.

In proposing the adoption of the financial statement, Mr. S. A. R. Preston-Hillary, the Hon. Treasurer, paid a most graceful tribute to the energies of the Hon. Secretary, and said that in a very great measure the present position of the National Rose Society was due to the untiring zeal of Mr. Courtney Page—a remark which was received with much applause. He said he was also of the decided opinion that any increase in the Society's publications was a very wise investment and that every additional or revised publication always brought a substantial increase in the membership. Mr. Preston-Hillary briefly reviewed the statement of accounts, which showed a credit balance at the bankers of over £550. An additional investment of £1,000 in Great Western Railway Guaranteed Stock had been authorised, and this would bring the total reserve to approximately £7,000. The major portion of the Society's income, was, he said, derived from subscriptions, and these amounted to almost £6,000. The principal items of expenditure, in round figures, were publications, £2,315, printing, stationery, postages, etc., £1,211, and expenses of shows, including prize moneys, medals and plate, £1,667. Mr. H. R. Darlington, in seconding the adoption of the financial statement, heartily endorsed Mr. Preston-Hillary's tribute to the great work for the Society by Mr. Courtney Page and also referred to the valuable services of the Hon. Treasurer. Like the Report the financial statement was unanimously adopted.

At this point the new President, Mr. C. C. Williamson, took the chair, and in so doing referred to the great names of the Rose world, which in the past had been associated with the Presidency, and expressed his appreciation of the honour paid him. He was especially reminded, he said, of Dean Hole, who once wrote that the sweetest pleasure is to be honoured by those we honour. He was especially pleased that his first presidential duty should be to hand the Dean Hole Gold Memorial Medal to Mr. Sidney F. Jackson in appreciation of his great services. As was so well-known to the members, Mr. Jackson had for many years devoted a considerable amount of time to the Rose and to the National Rose Society. Mr. Jackson suitably acknowledged the presentation.

The ordinary business having been transacted, the question of a Royal Charter of Incorporation for the Society was discussed. In his capacity of hon. solicitor to the Society, and proposer of the motion on behalf of the Council, Mr. Preston-Hillary reviewed the provisions of the proposed charter in an admirably clear and lucid manner. He first recalled that twelve months ago the question was considered, but it was referred back to the Council for further consideration. The Council had appointed a sub-committee of four, which had met on many occasions, and had devoted a deal of time to the matter, considering it fully from every point of view. The result was that, with the exception of Mr. H. R. Darlington, the sub-committee were of the definite opinion that the time had arrived when a charter was advisable and necessary for the well-being of the Society. Following a report from the sub-committee to this effect, the Council had decided by twenty-six votes to five votes to adopt the recommendation and to put forward to the annual general meeting the motion: "That the Council be and is requested and authorised to apply to His Majesty's Privy Council for the incorporation of this Society by Royal Charter."

Incorporation into a Charter would give the Society many advantages, while it could not prevent it doing anything that the present rules permit. It was also stated that the present constitution placed too great a responsibility upon the Hon. Secretary, and that a charter would add to the dignity of the Society. An important provision of the charter was that which provides that of the governing body of the Society not less than two-thirds shall be amateurs. It would also give the Society itself a definite place and standing in all its transactions. The Rev. J. H. Pemberton, who formally seconded the motion, said that as one of the oldest members of the Society he had been actively interested in its growth from quite small beginnings to its present position, and he fully agreed with the need for a Charter.

In a brief and breezy speech Mr. H. R. Darlington was the chief dissenter. He expressed the opinion that a Charter would be a mistake and would tie the hands of the Society as they had never been tied before, and he felt that they should retain their old freedom. There was, he said, nothing that the Charter would permit that could not be done equally well under the old constitution, and he appealed for greater elasticity of working than would be possible under a Charter.

Several other members spoke from the standpoint of business men, and they welcomed a Charter as a necessity, and particularly in that it safeguarded the Society's officials.

In reply to some questions it was stated that the Charter had been drawn up as well as possible, and that the Council was of the opinion that it met fully with the needs of the Society.

On being put to the meeting the motion was overwhelmingly carried, there being only one vote against it, so that the National Rose Society will be Incorporated by Royal Charter.

THE ORCHID CLUB.

OWING to inclement weather, with frost and fog, the display of plants at the Orchid Club, held on the 16th inst., was numerically below the average of these meetings, and yet many plants of great excellence were exhibited.

PREMIER DIPLOMAS.

Cypripedium Memoria F. M. Ogilvie, var. Majesticum. The flower showed considerable improvement in colour as compared with when it was shown last season, the unique shape being retained. *C. Chrysostom var. Conyngham.* A large, well-set and well-balanced flower resembling the Christopher parent. Shown by Dr. CRAVEN MOORE.

GROUPS.

A. T. CUSSONS, Esq. (gr. Mr. F. Cookson), exhibited a large group of hybrid Calanthes, Cymbidiums and Cypripediums, also many interesting species.

Mrs. HARDY staged a few choice Odontoglossums, including Wodin, white crispums, and xanthotes.

Dr. CRAVEN MOORE (gr. Mr. C. Branch) showed many choice Cypripediums.

VERNON CLAY, Esq. (gr. Mr. S. Smith), staged a selection of excellently-grown Cypripediums.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

THE monthly meeting of this Society was held in the Royal Horticultural Hall, Westminster, on Monday, the 12th inst., Mr. Chas. H. Curtis presiding.

Seven new members were elected. Six members were allowed to withdraw double the amount of interest from their deposit accounts, amounting to £24 5s. 6d.; one lapsed member withdrew the sum of £1 19s. 11d., and the sum of £373 3s. 6d. was passed for payment to the nominees of five deceased members.

The sick pay for the month on the private side was £96 7s., and on the State side £74 13s. 6d.; maternity claims totalled £4.

The sum of £17 1s. 11d. was granted to seven members for dental and optical treatment, and five other cases were considered.

A special sub-committee was formed to arrange for the annual dinner to take place during Chelsea Show week, and to recommend the best means of commemorating the Society's Diamond Jubilee.

READING AND DISTRICT GARDENERS'.

THE Annual Meeting of the above Society was held recently in the Abbey Hall; the President, Mr. Frank E. Moring, presided over an excellent attendance of members. The Annual Report and Balance Sheet for 1924 showed that the Association was in a very sound financial position, and that the membership was steadily increasing, the number at the end of 1924 totalling two hundred and eighty-six.

The following were among the officers elected for 1925:—President: Frank E. Morin, Esq.; Vice-Presidents: Alderman F. B. Parfitt, J.P., Leonard Sutton, Esq., C.B.E., J.P., and E. P. Foquett Sutton, Esq., M.B.E. (Mlty.); Chairman: Mr. A. W. Gower, Calcot; Vice-Chairman: Mr. F. J. Green, Aldermaston; Hon. Treasurer: Mr. A. H. Leaver; Committee: Messrs. F. Alexander, E. Blackwell, G. Carter, A. J. Cobb, H. H. Cook, W. Chislett, A. H. Fulker, M. Goddard, F. Goodger, H. Goodger, C. J. Howlett, R. J. Lloyd, H. C. Loader, T. Martin, H. Reeves, F. Townsend, D. Turner, H. Wynn, J. Wynn, and J. Young; Mr. H. G. Cox was appointed the Honorary Secretary and Mr. E. J. Dove Honorary Assistant Secretary.

ELGIN HORTICULTURAL.

IT was a very satisfactory report that Mr. George Milne, the secretary, had to submit to the annual meeting of this body, the premier Society in the land of Moray, on the 15th inst. The funds show a balance well on the right side, the membership is increasing, propaganda work, in the form of lectures, etc., has been exceedingly fruitful, and the annual show was an unqualified success, horticulturally and financially. The chair was occupied by Councillor T. L. Mann, the Chairman of the Society, who heartily congratulated Mr. Milne on the very gratifying report he had submitted. It was pleasing to learn that the lectures throughout the year had proved very popular. He hoped that a few excursions to Morayshire gardens would be arranged for this year.

The annual show held in August last had been an unqualified success, and declared by those in a position to know as being the finest display north of Glasgow. The work done by the Society in securing a concession by the Scottish Board of

Agriculture to plant non-immune early Potatos was much appreciated by the public, and he (the Chairman) was pleased to be able to say that he had had a communication from Mr. Symon, the Board's inspector at Inverness, granting a similar concession for this year.

The election of office-bearers then took place, the names of Brodie of Brodie and Mr. J. F. Cumming, convenor of the county, being added to the list of patrons. The Chairman, in moving the re-election of Lord Provost Forsyth as honorary president, paid a high tribute to the great interest his lordship took in the affairs of the Society and the warm support he extended to all pertaining to the advance of horticulture in the county. Councillor Mann was re-elected president. Messrs. C. G. Cumming, Elgin, and J. McGillivary, Newton, were re-elected vice-presidents, and the worthy and highly competent secretary, Mr. George Milne, was whole-heartedly retained in his post.

The annual show was fixed for Wednesday, August 26, and a sub-committee appointed to revise the prize schedule.

TRADE NOTES.

The list of Royal Warrant Holders to King George V. includes the name of Messsrs. John Peed and Son, West Norwood, London, S.E. 27, under the heading "Plants and Seeds," also Messrs. Daniel Bros., Ltd., Norwich, and Messrs. Fisher, Son and Sibray, Ltd., Sheffield. We regret that these firms were omitted from the list sent us and published on p. 48.

Relatively few chip baskets of the approved standard capacities and stamped in the manner agreed upon at a public conference on the subject held in July, 1922, are in commercial use, and the Ministry of Agriculture is desirous of considering with the manufacturer what action can usefully be taken with regard to the whole question of standardised chip baskets.

The Ministry of Agriculture is therefore inviting representatives of all manufacturers of chip baskets for Strawberries to attend a meeting to be held at the offices of the Ministry, 10, Whitehall Place, London, S.W. 1, at 2.30 p.m., on Wednesday, the 28th instant. The Ministry has communicated with a number of the manufacturers direct, but if there are any others who have not been so reached, will they kindly take this notice as an invitation to themselves.

ANSWERS TO CORRESPONDENTS.

Gardening Profession: *Enquirer.* A great deal depends upon what particular line you propose to follow. If you have a desire to continue in private service, then your best plan would be to obtain experience by procuring employment in two or three of the best gardens where all departments are well represented. If your taste lies in the direction of public gardening, then it is desirable that you should seek employment in a good public park to begin with, and then endeavour to obtain a position under the London County Council, in the Manchester Parks or the Glasgow Corporation Parks, thus fitting yourself for the higher and more remunerative positions. If commercial horticulture is the attraction, similar lines should be followed, except that thoroughly well-managed commercial establishments should be chosen wherein to obtain experience before commencing business on your own account. Meanwhile you should study plant life and make yourself acquainted with plants as growing, take up elementary botany and other useful branches of study that may fit you for future positions.

Communications Received.—H.P.K.—C.P.—S. & S. F.D.H.—A.J.McS.—M.G.K.B.—H.G.M.—H.L.O.

MARKETS.

COVENT GARDEN, Tuesday, January 20, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–18 0
elegans	10 0–12 0
Aralia Sieboldii ...	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray, —12's, 15's ...	5 0– 7 0
Crotons, per doz.	30 0–45 0
Cyclamen—	
—32's	36 0–48 0
—48's	24 0–30 0

	s. d. s. d.
Cyrtomium ...	10 0–15 0
Erica melanthera, 48's, per doz. ...	21 0–30 0
— —60's, per doz.	8 0–10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0– 4 0
Marguerites, white, 48's, per doz. ...	18 0–30 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia ...	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's ...	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 6

Cut Flowers, etc.. Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun. ...	12 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays ...	1 6– 2 6
short „ ...	0 9– 1 3
—Sprengeri, per bun.	
long sprays ...	1 6– 2 0
medium „ ...	1 0– 1 6
short „ ...	0 4– 1 0
Bouvardia, white, per doz. bun ...	12 0–15 0
Camellias, White, per box ...	3 6– 4 0
Carnations, per doz. blooms ...	3 0– 5 0
Croton leaves, var., doz. leaves	0 9– 2 6
Daffodils, per bunch –	1 6– 1 9
—Double Daffodils	1 6– 1 9
—Golden Spur ...	1 6– 1 9
—Soliel d'Or ...	0 9– 1 6
Fern, French, per doz. bun. ...	0 9– 1 3
Freesia, per doz. bun.	4 0–18 0
Galax, American, green and bronze, per doz. bun. ...	— 3 0
French Flowers—	
Carnations, per bun	1 6– 2 0
Marigolds, per pad	7 0–10 0
Mimosa, per pad	8 0–12 0
—per bun. ...	1 0– 1 3
Narcissus, Paper White per pad	30 0–40 0
—doz. bun. ...	7 0– 9 0
Ranunculus, double scarlet, doz bun.	10 0–12 0
—Carmine, per doz. bun ...	8 0–12 0

	s. d. s. d.
Roses, Safrano per bun. of two doz. blooms	3 0– 3 6
—per pad... ...	8 0–10 0
—Ulrich Brunner, per doz. blooms	6 0–10 0
Violets, Parma, per bun. ...	6 0– 7 6
—single, per pad	8 0–12 0
Lilac, Dutch, per spikes	4 0– 8 0
Lilium lancifolium album, per doz. blooms	— —
—rubrum, long, per doz. blooms ...	4 0– 5 0
—short „ „ ...	3 0– 4 0
Lilium longiflorum long, per doz. ...	12 0–14 0
short „ „ ...	10 0–12 0
Lily of the Valley, per doz. bun. ...	24 0–36 0
Orchids, per doz.	
—Cattleyas ...	24 0–30 0
—Cypripediums ...	5 0– 7 0
Prunus triloba (Dutch), per bun.	1 0– 1 6
Richardias (Arums) per doz. ...	9 0–12 0
Roses, new crop, per doz. blooms, Richmond ...	10 0–18 0
Ruscus, French, per bun. ...	1 0– 2 0
Smilax, per doz. trails	2 0– 3 0
Tulips, per bunch—	
—Couronne d'Or	2 0– 2 6
—La Reine ...	2 0– 2 6
—Mon Tresor ...	2 0– 2 6
—Prince of Austria	2 0– 2 6
—Rosina	2 0– 2 6
—Thomas Moore	1 9– 2 0
—Wm. Copland...	3 0– 4 0
Violets, per doz. bun	2 0– 8 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	— —
—Best	4 0– 6 0
—Others	— —
—Madeira, per box	4 0– 6 0
Beets, per cwt. ...	4 6– 5 0
Cabbage, per tally	6 0–10 0
Canary Island Tomatos ...	16 0–25 0
Cauliflowers, per doz.	4 0– 5 0
Forced Mint, per doz.	6 0–10 0
Celery, best, washed, per bundle ...	2 6– 3 0
—Second	0 8– 0 9
Chicory, per lb. ...	0 5– 0–6
Carrots, per cwt.	3 6– 5 0
Cucumbers, each	2 6– 4 6
Dutch Onions ...	10 0–12 0
Endive, per doz.	2 0– 3 0
Batavia, per doz.	— 3 0
English Asparagus—	
—Finest	8 0–10 0
—Best	5 0– 6 0
French Asparagus—	
Paris Green ...	7 0– 8 0
Lauris	— 10 0

	s. d. s. d.
Greens, per bag...	1 0– 2 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundles	3 0– 4 0
Lettuce, per dozen	1 6– 2 0
—Outdoor ...	2 6– 3 0
Mushrooms, cups	2 6– 3 0
—boilers	1 6– 2 0
Onions, Valencia, per case ...	14 0–16 0
Parsnips, per cwt.	4 0– 6 0
Potatos, Canary Island, per case	12 0–14 0
—Spring Crop ...	20 0–24 0
Potatos, per ton—	
—Dunbars ...	230 0–240 0
—King Edward	210 0–240 0
—Whites ...	90 0–200 0
—New Guernsey	1 0–0 10
Rhubarb, Forced, per doz.... ...	2 0– 2 6
Savoys, per tally	7 6–12 6
Seakale, per punnet	2 6– 3 0
Spinach, per bushel	3 0– 4 0
Sprouts	— —
Sweet Potatos ...	— 3 0
Turnips, per cwt.	4 0– 5 6

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Oregon Newtown	13 0–16 0
—Newton Wonder	6 0–10 0
—Bramley's Seedling	8 0–12 0
—Californian Newtown	11 0–12 6
—Delicious ...	12 0–14 0
—Winesap ...	14 0–16 0
—Nova Scotia—	
—Stark	26 0–30 0
—Russett... ...	25 0–30 0
—Baldwin ...	22 0–26 0
—Greening ...	24 0–35 0
Bananas, singles	17 0–25 0
—doubles	17 0–27 6
Californian Pears—	
—Winter Nelis, per case... ...	30 0–32 6

	s. d. s. d.
Grapes—	
—Gros Colmar ...	2 3– 4 0
—Belgian Colmar, per lb.	2 0– 2 6
—Almeria, per barrel	30 0–35 0
Grape Fruit, Cuban	16 0–20 0
—Florida	20 0–25 0
Jaffa Oranges ...	15 0–16 0
Kent Cobs, per lb.	1 0– 1 2
Lemons, Messina, per box	8 0–10 0
—Murcia	12 0–13 0
Oranges, Spanish—	
—300's	15 0–30 0
—360's	14 0–18 0
—504's	14 0–20 0
Pines	3 0– 5 0
South African Peaches... ...	6 0–12 0
—Apricots ...	4 0– 5 0
—Plums	5 0– 8 0
Tunis Dates, per doz.	3 6– 5 0

GLASGOW.

Apart from an advance in prices of Apples and Onions and a further reduction in Oranges, prices were steady during the past week, with the usual firmer tendency towards the close. In the fruit section, imports of Apples in barrels are almost over for season, but large quantities in cases were landed from the Pacific ports, *via* the Panama Canal Average prices for the week may be quoted as follows:—Newtown Pippin, 35/- per barrel; Baldwin, 34/-; Stark's, 33/-; Winter Greening, 32/-; Windsor Chief, 30/-; and York Imperials, 26/- to 30/-. Winesaps made 13/6 to 17/- per case; Spitzbergen, 13/- to 15/-; Ortley, 13/- to 14/6; Newtown Pippin, 13/6 to 16/6; Delicious, 16/6 to 17/6; and Rome Beauty, 12/6 to 15/. Winter Nelis Pears brought 30/- to 34/- per case; and Grape Fruit from 16/- to 22/-. Oranges continued plentiful at the following easier values:—(504), 13/- to 15/-; (300), 10/- to 12/6; (360), 10/6 to 13/6; (240), 10/6 to 12/-; (200), 17/- to 24/-; and (120), 13/- to 14/6; Jaffas, 14/-; Sunkist, 28/- to 32/-; Seville, 18/- per ½-case; and Malaga, 15/6. Lemons were also cheaper at 6/- per box and 8/6 per case. There were no Muscat Grapes, but Gros Colmar was steady at 2/6 to 3/6 per lb., and Belgian, 2/-.

Onion supplies were again short, and as the demand was good, buyers had to concede higher prices, 4's being 14/-, 5's 18/-, and 6's 16/- per case.

The cut-flower market was without special feature. Tulips arrived in greater quantities, but a large proportion of the blooms were short in the stem. Double pink blooms sold at 1/6 for 6's, William Copland, 1/2 to 1/5; Rosina and Rosebery, 1/- to 1/3; Prince de Ligne, 1/- to 1/1; Couronne d'Or 1/6 to 1/9; Prince of Austria, 1/3 to 1/6; and Murillo, 1/4 to 1/6. White Hyacinths made 8d. to 1/1, and blue, 1/3 to 1/4. Small consignments of Chrysanthemums of medium quality brought 9d. and 10d. per bunch, while Golden Spur Daffodils ranged from 1/6 to 1/9 per bunch. Narcissus made 8/- to 9/- per doz. bunches; Lily-of-the-Valley, 1/6 to 1/9 per bunch; English Violets, 2/- to 2/6 per doz.; Mimosa, 5/- to 8/- per pad; Lilium rubrum, 4/- to 5/- per doz.; and Carnations, 3/- to 3/6 per dozen.

SCHEDULE RECEIVED.

National Sweet Pea Society.—Twenty-fifth Exhibition to be held at the Royal Horticultural Hall, on Thursday and Friday, July 16 and 17.—Secretary, Mr. A. C. Bartlett, 18, Kew Road, Kew.

GARDENING APPOINTMENTS.

Mr. E. S. White, for the past six years Gardener to the late J. C. Chadwick, Esq., Leadhall Grange, Harrogate, and Duna Lodge, Kirbymoorside, Yorks., as Gardener to the Bradford Cemetery Company, Undercliffe, Bradford, Yorkshire.

Mr. H. Pateman, for the past two-and-a-half years Foreman at Tranby Croft, Hull, as Gardener to Mrs. Arthur Wilson, at the same address. (Thanks for 2s. for R.G.O.F. Box.—Eds.)

CATALOGUES RECEIVED.

W. Smith and Son, Ltd., Exchange Warehouses, Aberdeen.
Barr and Sons, 11, King Street, Covent Garden, W.C.
Hurst and Son, 152, Houndsditch, E.1. (Wholesale).
Harrison and Sons, Leicester.
William Watt, Victoria Bridge, Cupar.
E. P. Dixon and Sons, Ltd., Hull.
Samuel Finney and Co., 18, Grainger Street, Newcastle-on-Tyne.
G. H. Plant and Co., The Eastgate, Chester.

Thomas Green and Son, Ltd., Leeds.—Lawn mowers, etc.
Blackmore and Langdon, Twerton Hill Nursery, Bath.—Begonias, Delphiniums, etc.
Dobbie and Co., Ltd., Edinburgh.—Plants.
Hurst and Sons, 152, Houndsditch, E.1.—Bamboo canes, bulbs (Wholesale).
H. Scott and Sons, Woodside, South Norwood, S.E.—Sundries.

THE Gardeners' Chronicle

No. 1988—*SATURDAY, JANUARY* 31, 1925.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 39·3.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, January 28; 10 a.m.: Bar. 30·2, temp. 46°. Weather, Fine.

Botany and Forestry in Hong Kong.

THE Report for 1923 of the Botanical and Forestry Department, Hong Kong, shows that gardeners in the Island are by no means exempt from the troubles which seem everywhere to be their lot—troubles no doubt sent by an even-handed Providence to prevent them from being insufferably happy. Typhoons of July and August blew down many specimen trees in the Botanic Garden, among them a fine specimen of Aleurites triloba, a full grown Cinnamomum Burmannii, a Paulownia Fortunei, and damaged the avenue of Grevillea robusta as well as many other trees. Then, on one occasion, eleven inches of rain were registered within twenty-four hours, so that we here, who complain bitterly of the twenty-eight or so inches which have fallen so leisurely during the past year, may take some satisfaction as well as express sympathy in the heavier misfortunes of our friends. Again, forty minutes after the Japanese earthquake—coincidence or consequence!—there was a large landslide which brought down a great bank of earth and with it two large Araucaria Bidwillii and permanently changed the configuration of the gardens in its neighbourhood. The wet autumn spoiled the Roses and rains of July and August made sorry sights of the summer annuals. But, nevertheless, planting goes on and many interesting specimens are being planted in the grounds in charge of the department. After the typhoons the labour of the Department of Forestry is severely taxed in clearing fallen trees, but volunteer Chinese labour lightens the task. Unfortunately the voluntary labour is so energetic that it continues after the fallen timber has been cleared and proceeds to the removal of standing trees, so that no little time of the garden staff is spent in keeping it away or haling it before justice. Not the least curious page in the report is the list of convictions for offences of this kind. Some delinquents escape with fifty cents fine, others spend six weeks in prison and thus the garden is weeded—at least we hope so—of some of the worst offenders. It is just before the Chinese New Year that the garden officials have the most anxious time. The natives apparently have a high appreciation of the decorative value of the flowers of Enkianthus quinqueflorus and spare no pains to acquire them. But for the vigilance of the Department the most beautiful shrub of Hong Kong would soon be entirely lost to the Colony. Among the many activities of the Botanical Department is the inspection of bulbs of Narcissus Tazetta intended for export to the United States. In spite of everything the million or more bulbs were found to be free from fungous disease and noxious insects. The Report ends, as reports should, on a note of confident optimism. The Superintendent trusts that the work of the Department has been kept in its usual high level. For our part we are sure it has. In despite of storms and floods gardeners at Hong Kong and indeed all over the world contrive to maintain their gardens at the usual high level and those who know best how much labour is involved give them most and heartiest thanks.

Challenge Cup for Dahlias.—Mr. George Monro has presented a handsome Silver Challenge Cup to the National Dahlia Society, for competition at its annual shows. It will be awarded to the best example of floral work in which the Dahlia is exclusively used. Any kinds of foliage will be allowed. Full particulars will be found in the schedule, now in preparation, and obtainable from the Hon. Sec., Mr. W. J. Chittenden, 2, Dents Road, Wandsworth Common, S.W. 11.

The Royal Gardeners' Orphan Fund.—The Annual General Meeting of the subscribers to this fund will be held at "Simpson's," 100, Strand, London, W.C., on Wednesday, February 11, 1925, for the purpose of receiving the Report of the Committee and Statement of Accounts for the past year; to elect officers for the ensuing year; to elect ten children to the benefits of the fund; and to transact such other business as may arise. The chair will be taken at 3 p.m.

Bequests by the late Sir Harry Veitch.—The late Sir Harry J. Veitch, V.M.H., who left property of the value of £79,385 with nett personalty £58,987, made bequests of £1,000 each to several religious societies, and £200 for five years to the London City Mission, with which he was so intimately connected. He bequeathed £500 to the Royal Gardeners' Orphan Fund, and directed that payment of annuities to several members of his firm or their widows should be continued; he also left the sum of £5 for each year of service to his gardener, Mr. Clarke and Mr. Clarke's wife. His executors are Mr. Edward Sherwood, Mr. George Ingram, and Mr. Robert Messenger, to each of whom he bequeathed £250, and to Messrs. Ingram and Messenger a further sum of £250 each whether they act as executors or not. To Mr. Ingram he also bequeathed a clock and two vases, and to his nephew, Mr. P. C. M. Veitch, a gold watch. The large silver-gilt cup which his firm won at the International Horticultural Exhibition in 1912 and a silver candelabra presented on his silver wedding by gardening friends, he bequeathed to the Masters, Wardens, and Commonalty of the Gardeners' Company. He left the residue of his estate to the Gardeners' Royal Benevolent Institution, and also two houses in Hinton Lawn Road and in Eldon Road, Hampstead.

Mr. A. N. Rawes.—The many friends of Mr. A. N. Rawes, Secretary of the Royal Horticultural Society's Fruit and Vegetable Committee, will learn with great regret that he has undergone an operation for appendicitis and that he will be absent from his duties at Wisley for several weeks. Our readers will join with us in wishing Mr. Rawes a speedy recovery.

The White Medal.—The American George Robert White Medal of Honour has been awarded by the Massachusetts Horticultural Society to M. Joseph Pernet-Ducher, the famous hybridiser of Roses. This medal was established several years ago as the result of a gift by Mr. White, and is commonly considered the highest horticultural award in the U.S.A. It is given for eminent services in horticulture, and the recipient each year is chosen by a committee, of which Prof. C. S. Sargent is chairman.

Potato Trials.—The National Institute of Agricultural Botany is now prepared to accept entries for its fourth series of yield and quality trials of new varieties of Potatos from breeders who are willing to entrust the Institute with the marketing of their productions on a profit-sharing basis. The trials are planned to last for five years, at first for Scotland only, but in the later years also in the English Potato districts. Only those varieties which do sufficiently well in the trials will be placed on the market. Full particulars of the conditions of the trials are given in a form of agreement which may be obtained from the Secretary, National Institute of Agricultural Botany, Huntingdon Road, Cambridge, to whom those intending to enter new varieties for these trials should apply not later than February 28, 1925.

Trees as Wind Breaks on Rifle Ranges.—The Glasgow Territorial Association has adopted an important scheme for the provision of windbreaks on their shooting ranges at Dechmont, situated some six or seven miles south of the city. According to the plan which has been prepared by Mr. James Whitton, late Superintendent of the Glasgow Parks, upwards of 60,000 trees are to be planted and these will consist of Scotch Pine, Black Austrian Pine, Douglas Fir, Norway and Sitka Spruce, European and Japanese Larch, Thuya gigantea, Ash, Lime, Sycamore, Willow, Birch, Thorn, Rowan, Bird Cherry and Geans. The wind screens will be composed principally of the Conifers, supplemented by Ash and Rowans, while Willows are to be used in the damp areas. The targets are situated at the base of a hill and as the ranges are exposed to both south-west and south-east winds, which are the prevailing directions during the season, the trajectory of the bullets has been affected to an unusual degree. It is, therefore, proposed to plant two main straight belts, one on the right or south-west, which will be one-hundred-and-eighty feet wide and the other on the left or south-east, which, being less troublesome, is to be twenty feet narrower. There is also a semi-circular screen and a subsidiary elongated belt to the right, together with a screen which will extend along the road boundary. As the trees are meant for shelter and not for timber, Mr. Whitton has made a departure from the recognised systems of planting. The trees are being planted five feet apart and between every two rows of Ash, Beech, or Sycamore, which are specified as the permanent groupings, there are to be three rows of Firs equidistant from each other. As growth develops the young trees will be thinned so as to increase the space between each from five feet to ten feet, and subsequently the two outer rows of Firs may require to be eliminated altogether. On the summit of Duchmont hill there is an old quarry which is to be screened temporarily, as the planting of the upper area of elevated ground may form part of an extended scheme. The soil is thin and may require to be supplemented in places. The contract to supply the trees has been secured by Messrs. Austin and McAslan, Glasgow, who will also undertake the work of planting, and the whole scheme is to be completed before the shooting season commences.

Purchase of Forest Lands in Scotland.—Mr. Donald Munro, O.B.E., timber merchant, Banchory, Kincardineshire, and a great authority on forestry, has purchased the finely wooded estate of Newe, Aberdeenshire, as a purely commercial transaction. The estate extends to 1,286 acres, and is situated on the River Don, some fifty miles from Aberdeen. Some of the finest old Scots Fir and Larch to be found in this country grows on Newe. There is also one of the stately homes of Scotland on the estate, Castle Newe, and its setting and surroundings form one of the beauty spots of northern Scotland. Newe has been in the possession of the Forbes family for over four hundred and fifty years, and the transference of the property now carried out has been made by Sir Charles S. Forbes, of Newe.

National Chrysanthemum Society. — The annual meeting of the National Chrysanthemum Society will be held on Monday, February 2, at Essex Hall, Strand, at 6 p.m.

Retirements from the Sydney Botanic Gardens.—Mr. A. N. Allan, of the staff of the Sydney Botanic Gardens, has lately retired after thirty-nine years' service. His early horticultural training was received at Gunnersbury Park, London, and Waddesdon Manor, Bucks., but while still a young man he went to Australia, and joined the staff of the Botanic Gardens in Sydney, where he introduced into the flower garden the favourite old Pelargonium Paul Crampel. Mr. J. L. Boorman has also retired recently, with thirty-seven years' service to his credit. He held the position of Botanical Collector on the Botanic Gardens staff, and took many fruitful journeys through the State of New South Wales. He never spared himself, although his untiring pursuit of a rare specimen often entailed the greatest hardships.

Presentation at Newcastle.—On the occasion of the annual dinner of the Newcastle Horticultural Mutual Improvement Society, the Deputy Lord Mayor of Newcastle, who presided, presented, on behalf of the members, an umbrella to the late treasurer, Mr. A. Ramson, and also a fountain pen to Mr. A. Hall, in recognition of their services. In response to the toast of the Newcastle Horticultural Mutual Improvement Society, Mr. F. Fox, of Messrs. Finney and Co., stated that whereas in 1903 there were only thirty-six members of the Society, the number in 1924 had increased to two-hundred-and-thirty-seven. The Lord Mayor of Newcastle, Alderman W. Lee, J.P., is the President, and Mr. Brough in welcoming the Deputy Lord Mayor stated that the Society was greatly honoured in its connection with the civic authorities.

Mr. J. K. Ramsbottom, N.D.H.—When commencing the serious business of life Mr. J. K. Ramsbottom intended to become an analytical chemist, and he studied at Manchester with that aim in view. Unfortunately for himself, but fortunately, as it now seems, for horticulture, his health broke down and he was ordered to take up some out-door occupation. Gardening had a certain fascination for him, and so he came to London, totally ignorant of horticulture, and studied at the Chelsea Physic Gardens to such purpose that when he sat for the Royal Horticultural Society's general examination (senior section) he was placed high in the second class. In October, 1911, he became a student at Wisley, and in April of the following year he gained first place in the Royal Horticultural Society's examination, winning the Gold Medal and scholarship. After his two years course at Wisley he secured first place for the R.H.S. Diploma and became special research student at Wisley in 1913. While occupying this position he investigated the Iris Leaf-blotch disease (see R.H.S. *Journal*, Vol. XL., p. 481). His ability attracted Mr. C. H. Curtis, who invited him to become Assistant Editor of *The Gardeners' Magazine*, a post he accepted and occupied during the early years of the war. When the Royal Horticultural Society decided to investigate the "Daffodil disease," Mr. Ramsbottom was invited to carry out the investigations. These he commenced at Wisley under the direction of Sir F. W. Keeble, F.R.S., and of Mr. F. J. Chittenden, V.M.H. who was then head of the Laboratory department. In the same year he sat for his final examination at Wisley and obtained the National Diploma in Horticulture. All the horticultural world knows that his investigations into the Daffodil disease led him to the discovery of eelworm as the source of the trouble, and in commercial bulb-growing circles it is equally well-known that Mr. Ramsbottom discovered and worked out the hot-water method of controlling this insidious pest. In 1918 Mr. George Monro invited him to carry on his investigations at Spalding, in the centre of one of the most important bulb-growing districts in this country. Here he carried out many experiments relative to general bulb cultivation and to Tulip troubles, but the result of a great deal of this work has never been published. His knowledge of bulbs is unusually extensive, and he has travelled widely in the bulb-growing districts of England, Scotland, Wales, Ireland, Scilly Isles, the Channel Isles, and Holland, and in all these places he is recognised as one of the greatest friends bulb growers ever had. As an appreciation of his services, the Spalding Growers presented him with a gold watch, suitably engraved. Subsequently, Mr. Ramsbottom became manager of Mr. George Monro's bulb department, but once again his health broke down. After recovering, he joined Mr. Curtis on the staff of *The Gardeners' Chronicle* as Assistant-managing Editor, while still holding an advisory position—in regard to pathological problems—with Mr. George Monro. In 1924, Mr. Ramsbottom was awarded the Barr Memorial Cup, which is at the disposal of the Royal Horticultural Society, on the recommendation of its Narcissus and Tulip Committee, and is held for one year by some one who has "down good work on behalf of Daffodils." As these pages go to press, Mr. Ramsbottom is sailing for the United States and Canada on a special mission for the dual purpose of lecturing on the Control of Eelworm Disease in Daffodils, and the sale of disease-free stocks of bulbs. He will also represent *The Gardeners' Chronicle* on this trip, which he is undertaking with the heartiest good wishes of the Directors and staff of this paper. He is sure of a warm welcome in America, but we would ask our American friends to remember that Mr. Ramsbottom is not blessed with a superabundance of physical energy, and we hope they will not "kill him with kindness."

MR. J. K. RAMSBOTTOM, N.D.H.

Daphne Laureola.—Judging from one or two enquiries which have reached us in consequence of the note on this plant on page 52, the Spurge Laurel, Daphne Laureola is not generally known to gardeners nowadays, although most of them are familiar with the sweet-smelling D. Mezereum. D. Laureola, of which an illustration is reproduced in Fig. 28, p. 73, is an evergreen species, and the flowers, which are now on the point of expanding, are yellowish-green and odourless. This Daphne makes an evergreen shrub of bushy habit and is useful for planting in moist places or in semi-shaded parts of the garden. It is a native of this country and is sometimes found wild in association with woodland.

Advertisements Disfiguring the Country-side.—All lovers of the country will express their approval of the recent decision of the Hove magistrates in protecting the natural beauties of the South Downs. The exhibiting of advertisements which obstruct the view of the landscape is not only bad taste but an infringement of the rights of the public, and those traders who offend in the disfigurement of the country in this way do not understand their own interests. In the case under notice it was stated that a hoarding obstructed the view of the hills and entirely destroyed the landscape even at a range of over a mile.

Southport Floral Fete, 1924.—We have received a copy of the statement of receipts and expenditure in connection with the Floral Fête held at Southport in 1924. From this we gather that the cost of preparing and re-instating the show ground came to £1,860 9s. 11d., while stationery, advertising, printing and bill-posting amounted to £1,313 18s. 5d.; prizes, medals, trophies, and judges' fees came to £1,890 19s. 5d. The horse-leaping events cost £444 8s. 1d.; wages, cartage, catering, and sundry expenses, £675 3s. 7d.; the park and grand-stand account, together with deputation expenses, £143. £149 7s. 11d. is charged to capital expenditure, while the erection of stands and conveniences, drainage, etc., amounted to £170 11s. 1d. The total expenditure was £7,094 16s. 5d. The income side shows receipts in respect of tickets and cash taken at the gates, £4,009 7s. 2d.; sale of programmes, £115; horticultural entry fees, £49 10s.; receipts from grand-stand, horse-leaping cards and horse-leaping fees, totalled £347 15s. 9d.; rent of spaces in the sundries avenue brought in £47 10s.; contractors' fees, refreshments, £160; donations towards prizes and trophies, £126 7s., with several smaller items, which bring the total income to £4,882 18s. 2d., leaving a deficit on the year of £2,211 18s. 3d.

A Colloid Layer around Soil Particles.—At a conference held recently, Professor N. M. Coomber, of the Agricultural Department, Leeds, in a discussion on "Recent Developments in Soil Science," pointed out that the mental picture of the soil had changed during the past ten years, and the subject had become much more complex. He said the old idea was that each soil particle was surrounded by water, but recent research has shown that there is a colloid substance around each particle, and in clays this colloid layer on the particles is much thicker than it is on the particles of silt or sand, which, to some extent, explains the difference in behaviour of these different types of soil. He pointed out that whilst all our soils are acid, all acid soils are not sour. All peaty soils, he stated, are acid, but are not necessarily sour. He also pointed out that, due to the difference in the thickness of the colloid layer on the particles, a small deficiency of lime in a sandy soil, as indicated by the lime requirement test, is much more serious than a similar deficiency in a clay soil. Clay, with its thicker colloid layer on the particles, has a greater lime-holding capacity, and therefore it is necessary to consider lime deficiency in relation to lime-holding capacity.

Appointments for the Ensuing Week.—Sunday, February 1: Wakefield and North of England Tulip Society's annual meeting. Monday, February 2: National Chrysanthemum Society's annual meeting at Essex Hall, Strand, 6 p.m., Tuesday, February 3: Royal Caledonian Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting; North of England Horticultural Society's annual meeting. Wednesday, February 4: Royal Agricultural Society of England Council meeting; National Viola and Pansy Society's meeting. Thursday, February 5: Nottingham and Notts Chrysanthemum Society's meeting. Friday, February 6: Manchester and North of England Orchid Society's meeting; Dundee Horticultural Society's lecture. Saturday, February 7: Blackburn and District Horticultural Society's meeting and lecture.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Botanic Garden, Calcutta.* We learn that Mr. Scott, of Chatsworth, has been appointed head gardener of this great establishment. His merits, as evinced in the admirable cultivation at Chatsworth, are too well-known to require comment. Mr. Scott was recommended by Mr. Paxton and Mr. Gibson, of Chatsworth; Messrs. Lowe; Messrs. Knight and Perry; Mr. Henderson, gardener to Earl Fitzwilliam; James Yates, Esq., F.R.S.; Dr. Moir, of Aberdeen, and others. Mr. Scott was a candidate for the Neilgherry appointment, for which Dr. Falconer and Dr. Royle selected Mr. Scott and Mr. M'Ivor as having the best claims. It was thought, however, that a man accustomed to the luxuries of Chatsworth would be ill-placed on the Neilgherries, where there was little either of garden or gardeners; and, therefore, as Mr. M'Ivor seemed a young man full of energy, and was both scientific and practical, he was preferred on that occasion, and his excellent conduct since his appointment has fully justified the expectations formed concerning him. That Mr. Scott should have had the offer of the first higher vacancy under the Indian Government shows the estimate formed of his skill as a gardener by the authorities at the India House. *Gard. Chron., February* 2, 1850.

HARDY FLOWER BORDER.

PHUOPSIS STYLOSA.

The plant illustrated in Fig. 26 will be better known to many readers under its old garden name of Crucianella stylosa, under which name it is figured in the *Botanical Register* 1838, t. 55. Dr. Lindley, in a note which accompanies the illustration in the *Bot. Reg.*, states that although he retained the name Crucianella the plant is certainly no Crucianella and requires to have some better place found for it. It was subsequently placed under Phuopsis by Bentham and Hooker, who founded the genus on the single species stylosa. It is described by Dr. Lindley as a beautiful herbaceous subject, well adapted for growing in beds so as to form a mass of colour.

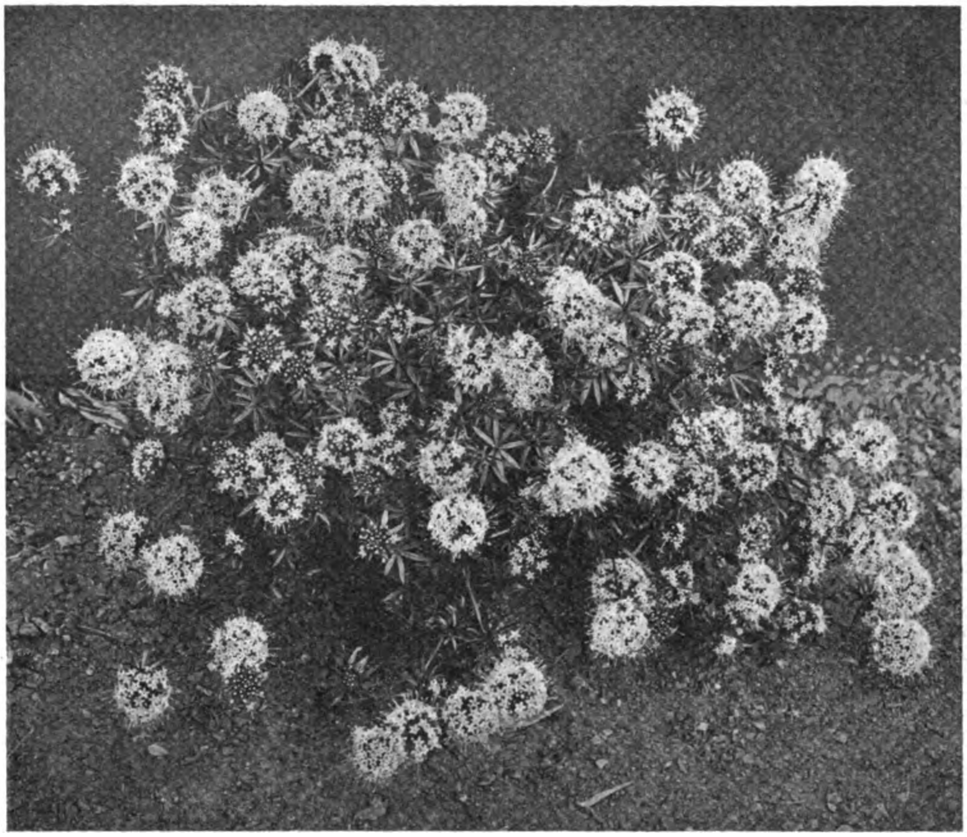

FIG. 26.—PHUOPSIS STYLOSA.

The plant belongs to the Rubiaceae, and like other members of that Order has the foliage in whorls. In the type the flowers are bright pink, but there is a variety named coccinea with scarlet flowers, and another named purpurea with purple blossoms.

This interesting plant is suitable for growing in the border, on banks, or in rockeries. It succeeds best in sandy or chalky soils. It is a native of Persia and was found growing on mountains in the province of Ghilan. The season of flowering is June, July and August, and as the plant makes a large mass it is very effective when covered with its pretty inflorescences.

The plant is easily increased by division in the early autumn and spring, and it may be raised also from seeds sown either in cold frames so soon as they are ripe, or in the open border in spring. In the rock garden, unless it is kept cut back, it is apt to spread too freely and encroach on the space allotted to other neighbouring subjects.

APHYLLANTHES MONSPELIENSIS.

This is an interesting plant belonging to the Liliaceae, and though introduced from Southern France so long ago as 1791 it is still comparatively uncommon in gardens. Being quite as hardy as most of the hardiest subjects that have come from southern Europe, A. monspeliensis will survive our winters almost anywhere, preferring a well-drained, but somewhat cool soil.

In its own country it resents exposure to full sun, and in most English Gardens it will probably succeed best in a little shade. In appearance the foliage of this curious plant closely resembles a straggly tuft of some grey-green Rush about eight inches in height, each cylindrical leaf tapering to a sharp point. When about to flower, in spring or early summer, the tips of some of these stem-like leaves swell into a single flower bud, suggesting the flowering stem of some miniature Onion, and each eventually breaks into a very beautiful, six-rayed star in a soft Lavender-blue.

A healthy plant will soon develop into a large clump, and though propagation may be effected by division or offsets, root disturbance is much resented, and established specimens are best left alone.

EPIMEDIUM PINNATUM.

Though Epimedium pinnatum will grow in shade, it seems to enjoy its share of the sun, and this imparts that beautiful, golden-bronze hue to both young and old leaves. It prospers here in dry, poor soil, the roots being wedged between stones.

Whilst this Epimedium will ultimately make a mass several feet across, its progress is very slow. Our oldest clump, over ten years old, has not yet covered a space thirty inches wide. *A. T. J.*

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

The Cool House.—The majority of the plants of Odontoglossum crispum, O. Pescatorei, and other species, together with the numerous Odontoglossum and Odontioda hybrids that occupy this division, are in their most vigorous stage of growth; their new pseudo-bulbs are forming, and it is necessary that great care should be exercised that they may be well developed and matured. The present method of cultivating Odontoglossums differs somewhat from that adopted many years ago, when the plants were grown under much cooler conditions. A temperature of 40° to 45° at night was at that time considered suitable; the majority of growers now-a-days do not allow the minimum temperature to fall below 50° to 52° when the weather is normal. As the majority of the plants are in full growth at this season they will require a moderate amount of water at the roots, and the atmosphere of the house should be more or less charged with moisture. The plants will be benefited by a liberal supply of fresh air that may be more freely admitted with a somewhat warmer temperature, which will help to develop and consolidate the new pseudo-bulbs upon which so much depends for the production of strong spikes and fine flowers. During periods of dull weather, when moisture evaporates slowly, water should be used sparingly. The plants should be watered with great care, allowing the compost to become dry between each application of moisture. The watering should be done, if possible, on bright days. The plants need plenty of light, therefore soot and dirt should be removed from the roof-glass by frequent outside washings. The plants will be in various stages of growth, some with shoots partly developed, whilst others will be pushing up their flower spikes. The latter should be neatly staked as they attain a sufficient length. It is an advantage to place the plants that are developing their flower spikes by themselves so that they may be examined from time to time for the presence of slugs that would cause serious damage to the young spikes if they were not destroyed. The flower-spikes should be removed from small, weakly plants so soon as they are observed. Plants that are in need of fresh rooting material may be re-potted when their growths are a few inches high and about to develop new roots. Newly-potted plants should be watered with great care at this season.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Antirrhinums.—These showy plants thrive under almost all conditions and are invaluable for summer and autumn effects. The modern varieties are suited to various systems of floral display, and when used for grouping in the colour border, in rows in the ribbon border, or for bedding out on a large scale, they are equally serviceable. For producing strong specimens to plant out-of-doors early in May seeds should be sown during the present month. Antirrhinums are perfectly hardy and do not respond to warm-house conditions at any period of their growth, hence time should be given them to develop under cool and natural conditions. Sow the seeds thinly in boxes or pans filled with a light compost. Make the surface firm and even and just cover the seeds with fine soil. Although the seeds germinate best in moderate warmth, the seedlings should be removed to a light, airy position in a cool house so soon as they appear. The first pricking out should be done so soon as the plants are large enough to handle, and if grown on under cool conditions the seedlings may be transferred to cold frames at an early date. The modern varieties of Antirrhinums include varieties of a wide range of beautiful colours, and there are dwarf, intermediate and tall types suitable for various positions in beds and borders.

Summer Bedding.—Plants of various kinds which were struck from cuttings at the end of last summer and have been wintered in pits or frames should now receive attention. Good results can only be obtained from well-grown specimens, and these young plants should now be potted into suitable sized pots and grown on in a genial temperature to produce strong specimens for furnishing the beds at the required time. It is usual to pot up the best of the plants when clearing the beds in the autumn, and if insufficient young plants are available from last season's propagation these old plants should be brought into an intermediate temperature to encourage the development of growths for the provision of cuttings, which should be inserted so soon as they are ready. Cuttings of Heliotrope, Fuchsias, Salvias, Plumbagos, Irisine, etc., should also be inserted and rooted in strong heat.

Sweet Peas.—The chief sowing of Sweet Peas indoors should now be made. The seeds may be sown in pots or boxes, but in either case ample space should be allowed for the young plants to develop without overcrowding. The soil should not be too rich for this purpose, as very opulent growth is not desirable. Germination may be accelerated by standing the boxes or pots in a warm house for a few days, but so soon as the plants are through the soil they should be removed to a cold frame and grown on in quite natural conditions.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Propagating Vines from Eyes.—Where new vineries are to be planted this season it is advisable to propagate stock for planting where plenty of hot beds are available. This is an easy matter. Secure a number of well-ripened shoots and cut out the strongest buds, leaving an inch of wood above and below the bud. Split the wood in halves and place the eye in a piece of turf about six inches square. Remove a little of the fine soil in the centre of the turf and fill it with sand in which to place the eye. Root the eye in a hand light, removing the latter for an hour every morning; the bud will soon break into growth and roots will push into the turf, when the light may be left off altogether. I have frequently fruited vines raised in this manner in eighteen months.

Apricots.—Thoroughly wash and cleanse the Apricot case, if this has not been done already, training the growths thinly and neatly. Take off a few inches of the surface soil and substitute a compost consisting of chopped loam, three parts, clean mortar rubble, one part, and a good sprinkling of wood ash. If the trees are weak, the following mixture will prove a good stimulant: 1 lb. of muriate of potash, 1½ lb. of dissolved bones, and 2½ lbs. of good bone-meal, applied at the rate of 2 oz. to the square yard and well watered in with tepid water. This receipt was given to me by the late Mr. S. T. Wright, and has proved most beneficial to old and weakened trees. Keep the ventilators open on all possible occasions.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Smilax (Medeola asparagoides).—This plant is worth growing if only for the purpose of hiding bare walls in plant houses. Sow the seeds about one inch apart in well-drained pans, filled with light, sandy soil, and place them over a brisk hot-bed in a warm house. When large enough to handle place the plants singly in small pots and finally in six-inch receptacles. After the last shift the pots should be placed about nine inches apart at the foot of the wall. A stout piece of galvanised wire running horizontally, just above the rims of the pots, and another fixed at the top of the wall, between which strands of black cotton may run perpendicularly (allowing about four strands for each plant), will provide sufficient support. A little attention now and then to prevent entanglement of the growth, will be all that is necessary as to training. Feed the plants with liquid manure when the pots are well filled with roots, and keep the wall and the plants well syringed to ward off attacks of thrips.

Annuals for the Greenhouse and Conservatory.—For an early spring display of annuals grown in pots, undoubtedly the best results are obtained from an autumn sowing. In case of failure, however, from any cause, and to provide a succession to the autumn-raised seedlings, seeds of Clarkia of the elegans type, Schizanthus of the compact forms, Stock Princess Alice, Stock Mauve Beauty and Mignonette may be sown now, all of which will prove useful for furnishing the conservatory and for room decoration. The Clarkias and Mignonette may be sown in five-inch and six-inch pots which have been three parts filled with an open compost of loam, leaf-mould and a little manure from an old hot-bed with a free addition of old mortar rubble. Sow three pinches of seed in each pot, eventually thinning the seedlings to three in a pot. When the latter is well filled with roots a top-dressing of richer soil may be given. The Schizanthus may be sown in small 60-sized pots, a few seeds only in each, leaving but one seedling at the thinning. When they are large enough pot the seedlings on into five-inch pots.

Stocks.—The two varieties of Stocks mentioned are admirable for pot culture. Sow the seeds thinly in pans, pot the seedlings singly when large enough into three-inch pots, from which they may be transferred to five-inch receptacles, or the young seedlings may be pricked off into other pans, and later potted into six-and-a-half inch pots, placing three in each receptacle. The plants should be grown near to the roof-glass and in cool conditions, without being exposed to cold draughts.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Small Fruits.—The planting of small fruits is often deferred until the larger fruit trees are planted. Gooseberries, Red Currants and White Currants become re-established more quickly after planting than the larger fruits. To grow Gooseberries and Currants well, and to be economical with the ground, I train them on horizontal wires strained across one part of the garden and attached to a post at each end. The bottom wire is two feet from the ground, the other wires eighteen inches apart. From five to seven leading shoots are trained up from the base, six to eight inches apart. The bushes are kept pruned to about four to six buds the first year or two, and as they grow larger, a little close pruning is practiced. We grow an abundance of fruit each year by this method, and the system admits of netting the fruits very easily where birds are troublesome. If the ground has been well cultivated it will be in good condition for receiving the bush fruits. After the planting is completed and the ground made neat and tidy, a sprinkling of lime over the surface will help to sweeten the soil. The final operation is the application of the mulching material as previously advised.

Peach Trees on Walls.—These trees should be attended to. Cut out all useless branches and weak fruiting-wood. The trees should be liberated from the wires by cutting all the ties, or if they are nailed with shreds these should be all cleared from the wall and trees. The shoots should be tied into bunches carefully with string and protected with tiffany or light canvas. This being completed the walls should receive a good cleansing by spraying them with nicotine-soap or paraffin-soap, according to the strength advised by the makers; this treatment will destroy many insects and their eggs in the crevices of the wall. After this has been done, and the wires and wall are dry enough, every opportunity should be taken to train the shoots in position again. The branches should be spaced about four inches apart, leaving room for the summer growths to be trained in. So soon as the tying is completed the trees should be sprayed with Bordeaux mixture, adding a little caustic soda at half the usual strength. When necessary the buds should be protected from frosts and cold winds, either by the use of tiffany or very light canvas. A neat method is to fasten a wire along the wall under the coping, about four inches or so from the brick-work, fix the wire to strong straining pins, driven in at the distance required to allow the covering material to be drawn either way. A wire may be fixed on wooden stakes driven in the border at the same distances as the pins in the wall above, the stakes to be put far enough away from the wall to keep the covering clear of the trees. Rings fixed on the covering material top and bottom for the wire to pass through will allow the tiffany to be drawn easily over the trees. The borders, after this other work is finished, need attention. If the trees are old established specimens a liberal dressing of fresh horse droppings or decayed manure, and a sprinkling of a concentrated fertiliser, should be distributed over the border and forked in three inches below the surface, if it is possible to dig to that depth without harming the roots.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Potatos.—If early Potatos are required for table use, tubers should be planted in large pots and gradually brought on in a greenhouse. Leave sufficient room in the pots to allow for a liberal top-dressing of rich soil later. If there is no available space in greenhouses for Potatos, and frames are available, the seed tubers may be planted in soil on hotbeds and brought forward quite early. All tubers should be sprouted sturdily before planting them.

Peas.—Sow seeds of an early dwarf variety of Pea on a warm south border for the earliest crop. There are many good varieties to choose from: the following sorts will be found to mature quickly: Eight-Weeks, American Wonder and The Sherwood.

Herbs.—Many herbs are required for use during the winter. Parsley and Chervil that are wintering in cold frames should be given plenty of air when the weather is suitable. All decaying leaves should be picked off the plants and the soil stirred occasionally to keep it sweet. Mint, Tarragon and Chives should be lifted in small clumps, planted in boxes in old potting soil, and forced in a greenhouse, according to requirements.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Kitchen Garden.—Make a sowing of Parsley in boxes to obtain seedlings for planting out in the open ground later. Seed Potatos of all early varieties for the first planting may now be set up in boxes for sprouting; keep them in a cool, dry atmosphere. The present is a suitable time to dress with lime any part of the kitchen garden needing it. Dormant Peach trees under glass will be benefited by being sprayed with clear water early on bright days.

Arundo conspicua.—This hardy, ornamental Grass is most effective in the pleasure grounds, especially in districts where Gynerium argenteum, the Pampas Grass, fails to bloom. In habit it resembles the Pampas Grass, but blooms much earlier, and any position suits it. In good soil this grass soon makes a large specimen from a very small portion. Other good grasses are Arundo Donax and A. macrophylla glauca [?]. The best time for planting these grasses is at the end of March or early in April. To produce good results a liberal top dressing of well-decayed manure may be given the roots.

Salvia patens.—If old tubers of this plant are now set up in boxes and placed in heat, cuttings will develop and these will soon strike and make good plants for bedding out later. Seeds of this Salvia may also be sown in heat now.

Lobelias.—Seeds of the annual dwarf Lobelias may now be sown in heat. Prick off the seedlings so soon as they are large enough to handle. Cuttings may be taken and rooted from choice varieties that were saved from last year's plants.

TREES AND SHRUBS.

PRUNUS SUBHIRTELLA AUTUMNALIS.

In the south of England Prunus subhirtella autumnalis produces its main crop of pinkish-white, semi-double flowers in mid-winter and not in the autumn as its varietal name would suggest. With me this Cherry is usually at its best during December, but it often continues flowering until the second or third week of January. A second, and lesser, crop of blossom, with noticeably longer peduncles, appears with the foliage in spring.

The finest specimen known to me is at Borde Hill, Sussex, the residence of Col. Stephenson Clarke, whom I have to thank for the photograph reproduced in Fig. 27. I understand this tree was planted in 1906, and it is therefore probably one of the oldest examples in the British Islands. According to Mr. Bean this Cherry was first put in commerce by Mr. T. Smith, of Newry, in 1911, as Prunus Micqueliana, by which name it is still sometimes known. *Collingwood Ingram.*

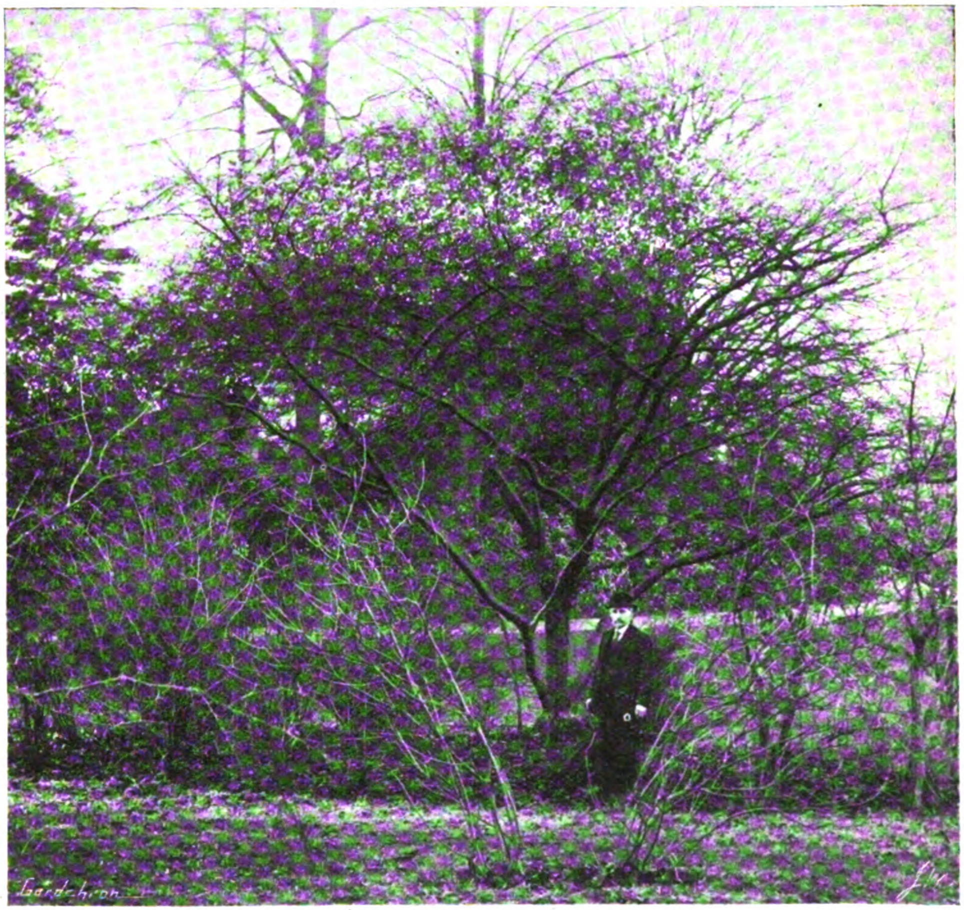

FIG. 27.—PRUNUS SUBHIRTELLA VAR. AUTUMNALIS.

THE WILBERFORCE OAK.

By the side of the public path, leading from Scotland Style to the home farm on the Holwood estate of Lord Derby, grows the Wilberforce Oak, also known as Pitt's Oak and the Emancipation Oak, beneath which it is said Pitt and Wilberforce were seated when the latter resolved to bring forward a Bill for the abolition of slavery.

The following note with reference to this episode is extracted from Mr. Wilberforce's diary of the year 1788. "At length I well remember, after a conversation with Mr. Pitt in the open air at the root of an old tree at Holwood, just above the steep descent into the Vale of Keston, I resolved to give notice on a fit occasion in the House of Commons of my intention to bring forward the abolition of the slave trade." These words are engraved on a stone chair which Earl Stanhope had set up close to this historic tree in 1862, by the permission of Lord Cranworth, who then owned the estate. Though I have no wish to pull down this historic tree from its present proud position, yet, with reference to certain notes which have appeared upon it of late, I venture to state that there are very good reasons to suppose that the conversation between Pitt and Wilberforce did not take place beneath this particular tree, but under another old Oak at a short distance away, which commands a site on elevated ground from which an uninterrupted view of the vale of Keston is obtained.

The late Lord Sackville Cecil, who had much to do with the Holwood property at the time of its purchase by Lord Derby, told me that Lord Stanhope came to Holwood Park, and in company with Lord Cranworth, who then owned the estate, fixed on the present tree after consulting the note in Mr. Wilberforce's diary. Lord Sackville always adhered firmly to the idea that the real tree was that standing on a knoll at a short distance away, and from which a wide and uninterrupted view of the vale of Keston can be seen.

The following reasons are given why the present tree is, in all probability, not the one under which the conversation took place:—(1) There is no view of, nor, "steep descent" into the vale from this Oak, nor could the former have existed in Pitt's time, as the intervening trees, which are between three hundred and four hundred years old, entirely shut out the scene; (2) it is most unlikely that two such prominent and well-known men as Pitt and Wilberforce would discuss so momentous a question by the side of a much-used public path, when in private grounds at a short distance away a much more convenient site, with a beautiful view of the valley beneath, and directly connected with Holwood House by a green drive, could have been chosen; (3) the choice of the present tree was no doubt largely influenced by the fact that it was growing close to the public path, and visitors did not require to trespass in order to see it; (4) owing to the use made by the public of this tree, it was most unlikely that anyone would converse for long beneath its shade.

Both Lord Derby and Lord Sackville Cecil were confident that the tree already referred to was the one under which the conversation took place, and when the former agreed with me to have the present tree fenced and supported he remarked that although it was most likely not the tree referred to by Wilberforce in his diary, yet as it had been chosen by Lord Stanhope, and a stone seat, with a suitable inscription recorded on it, erected, it would be unwise to alter it.

In passing it may be noticed that the iron fence, which was put up in 1899, was erected in order to prevent public interference, the stem, branches, and even outer twigs having, from time to time, been cut and broken, to be carried away as relics of the tree and its associations. Previous to the fencing being erected, the hollow stem was thoroughly cleaned out and disinfected, and the aperture covered over, thus to a great extent preventing the ingress of water, and assisting in the preservation of the tree. It is to be regretted that the seat has been subjected to much wanton damage at the hands of the public, as not only is it defaced by names and dates, but large pieces of the stone-work have been broken off and removed.

Pitt's Oak, with which the present tree is often confounded, stands within a stone's throw of Holwood House, and without the garden wall. It occupies a conical mound, part of the Brito-Roman encampment, beneath the spreading branches of which it was Pitt's habit to sit and read. Though hollow it is in a fairly good state of preservation, and the heavy branches have been bound together by means of iron bands and rods, in order to prevent damage by strong winds. *A. D. Webster.*

WHITE-STEMMED BRAMBLES.

Of the several white-stemmed Brambles, Rubus biflorus and R. b. quinqueflorus are most generally cultivated. When established, groups of this species, with white, upright canes, from six feet to eight feet high, are conspicuous in a winter landscape, particularly when environed by Pines or other dark-foliaged evergreens.

R. leucodermis is similar in habit, but despite its specific name is inferior in decorative effect.

R. lasiostylus, of recent re-introduction, is dwarfer and more refined in appearance, and, when defoliated, makes a conspicuous group in the shrub border.

R. Giraldianus, with bending, silvery sprays, like white surf crowding the tip of the biennial stems, is seen to advantage foaming over a bold bluff in the rock garden, or when planted in the mass for distant effect, in the wild garden, or by a stream. *Fred. W. Jeffery.*

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

PRIMULA SINENSIS.

A large number of Primulas may be treated as annuals, and they form a very important group of plants for the embellishment of the conservatory and greenhouse. Of these, Primula sinensis and its many beautiful varieties are of prime importance; especially the light and graceful stellata varieties, which are useful for decoration.

Their successful cultivation should not present any difficulties provided the plants are grown under perfectly cool conditions. Seeds should be sown during May and June, and the compost should consist of equal parts of light loam and well-decayed leaf-mould, with the addition of some silver sand. It is advisable when filling the seed pans or pots to make the compost moderately firm. As the seeds always germinate unevenly and at uncertain intervals, it is important to sow them thinly so as to allow for the easy removal of the more forward seedlings. After watering, cover the seed-pans with a piece of glass and keep the soil shaded until germination takes place, during which process a temperature of 55° to 65° should be provided; gradually accustom the seedlings to cool and airy conditions, keeping them from very bright sunshine.

So soon as they are fit to handle prick them off into 48-sized pots, or, if large quantities are grown, into pans or boxes. Later transfer the young plants singly to thumb pots, using a slightly heavier compost than that recommended for seed sowing.

Subsequent cultivation consists in potting them on as the plants require it, five-inch pots being a suitable size in which to flower them; for the final potting use a medium consisting of three parts of good mellow loam, after it has been stacked for twelve months, one part of well-decayed leaf-soil, and sufficient old mortar rubble or sand to render the soil porous; mortar rubble is preferable to sand as P. sinensis is a lime lover. In potting keep the neck of the plant low to promote the formation of roots from the stem and so prevent the specimens from falling over; there is still a mistaken idea among many cultivators that low potting will result in "damping off."

The cultural details throughout the summer consist in careful watering, and growing the plants in perfectly cool and airy conditions either in cold frames or in low pits; shading also is necessary during the hottest parts of the day, but it must not be overdone, or the plants will soon become drawn and weak. About the middle of September plants that have been grown in cold frames should be removed to a cool greenhouse or pits, and grown in a position near to the roof glass; cool, airy conditions are still essential and a buoyant atmosphere should be maintained.

Although generally treated as annuals, Primula sinensis may be grown for a second year; they make very fine specimens, and these old plants may be obtained in flower before the younger ones. The stellata varieties are specially useful for this purpose.

There is a large range of varieties both in colour and form of flower. The foliage also varies from light green to almost black-crimson, some of Fern-leaf shape and others resembling those of the Oak. It is important to remember that all varieties offered by reliable seedsmen come true from seeds.

PRIMULA OBCONICA.

Here, as in the case of Primula sinensis, there has been immense improvement in this greenhouse Primula, not only in the size of the flowers, but also in the shades of colour, which range from blue and white through various of pink to deep crimson. In the grandiflora strains the character of the foliage is also very much altered, being much stouter and darker green in colour than in the ordinary type; in fact, it would be difficult for the present day generation of young gardeners to realise the great advance made from the original type with its poor, dingy, lilac-coloured flowers.

P. obconica is specially useful for conservatory decoration as the plants remain in bloom a long time, and from successional sowings it may be had in flower all the year round. If flowering plants are desired in the early autumn, seeds should be sown in March; further sowings may be made in May or June and again during August.

The cultural details given for P. sinensis may be followed for P. obconica, but as this species has a much more robust root system the plants enjoy liberal feeding when the flowering pots become well filled with roots; the compost for the final potting may also with advantage be somewhat heavier in character.

The grandiflora strains especially, often suffer from an obscure disease known as "chlorosis," the leaves being covered with white blotches which ultimately become brown; this condition may, to a great extent, be prevented by watering occasionally with a solution of sulphate of iron, and nitrate of soda, used at the rate of one oz. each to ten gallons of water. A stock solution may be prepared, diluting it, as required, to the correct strength.

This Primula has a somewhat unenviable reputation for its poisonous character, as in some susceptible individuals it causes a form of eczema, which is very painful, and in the writer's experience has, in some extreme cases, caused serious illness; anyone who is affected by this plant is advised not to handle it.

P. FLORIBUNDA, P. VERTICILLATA, AND P. KEWENSIS.

P. floribunda is another Primula which may be treated as an annual; it is also of interest as being one of the parents of Primula kewensis. There is a so-called grandiflora variety, which only differs from the type in having somewhat larger foliage and flowers; the variety known as Isabellina is another form with creamy-white blooms.

Primula floribunda is a very suitable plant for the small greenhouse, and its successful cultivation presents no difficulties. Seeds may be sown in an ordinary greenhouse during May or June. Excellent specimens may be flowered in 48-sized pots and this species grows freely in any good potting compost, succeeding best when given perfectly cool treatment during all stages of its cultivation.

P. verticillata, the other parent of P. kewensis, is a native of Abyssinia. From the decorative point of view it is a much better plant than P. floribunda, and deserving of greater popularity than it receives, for, with its grey, mealy foliage and pale yellow flowers, it is a very charming subject.

Although it may be treated as an annual, for plants raised from seeds sown during March will make quite good plants which will flower the following spring, it is really seen at its best when grown on for the second year, by which time the specimens should occupy six or seven-inch pots. It succeeds under the same conditions as P. obconica, cool greenhouse treatment being all that it requires. In fact, it is nearly hardy, and in Devonshire it has survived many winters, with only the protection of a rocky ledge in a rock garden.

The true P. kewensis does not produce seeds, and can only be propagated from offsets. It is unfortunate that the seed-producing form was not distinguished by a varietal name, as it differs considerably from the original type, both in appearance and habit; although not so elegant in form of growth, it has the advantage of producing plenty of seeds.

It succeeds perfectly well under the same conditions as that afforded P. obconica and also grows freely in any good potting compost. Good plants may be flowered in forty-eight-sized pots, in which they are very useful for general decorative purposes, but it is worth while to grow some specimens in six-inch pots, for in these they make very fine plants, and last much longer in flower. Seeds may be sown in a cool greehouse from March to June. *J. Coutts.*

INDOOR PLANTS.

HIPPEASTRUM (SYN. AMARYLLIS).

It is advisable to re-pot established Hippeastrum (syn. Amaryllis) bulbs every two or three years, and any that need re-potting should be attended to at the present time. The soil should consist mainly of good, fibrous, sandy loam, some flaky Oak leaf-mould, a free addition of old mortar rubble, broken finely, some fine grade oyster shell and coarse silver or river sand. A little well-decomposed dried cow manure, sifted through a fine meshed sieve, may also be included. The compost should be prepared well in advance of the time for using it, and be turned several times at intervals of a day or two.

At the time of potting the soil should be in a moderately dry condition, and not in the least pasty. Clean the bulbs thoroughly, carefully removing all loose coatings from them. When turning them out of the old pots, shake all the old soil away, carefully preserving the whole of the healthy, fleshy roots. The pots should be scrupulously clean, well and carefully drained, and dry when the bulbs are put into them. Only extra large bulbs will require receptacles of more than six inches or six-and-a-half inches in diameter.

When the soil is in a dry state it is easier to distribute it evenly amongst the mass of roots which a vigorous, healthy bulb should possess, than when it is over moist. Pot very firmly, taking care not to injure the bulbs with the potting stick, and leave three parts of the bulb resting above the surface soil when the potting operation is completed. To start the bulbs into growth after potting, place them in a house having a night temperature of about 55°. Apply water, in a sufficient quantity to moisten the whole of the new soil. This watering at the roots should suffice for probably a week or two, if the pots are plunged. Maintain a moist atmosphere, syringing the house once or twice daily in bright weather. *F. J. C.*

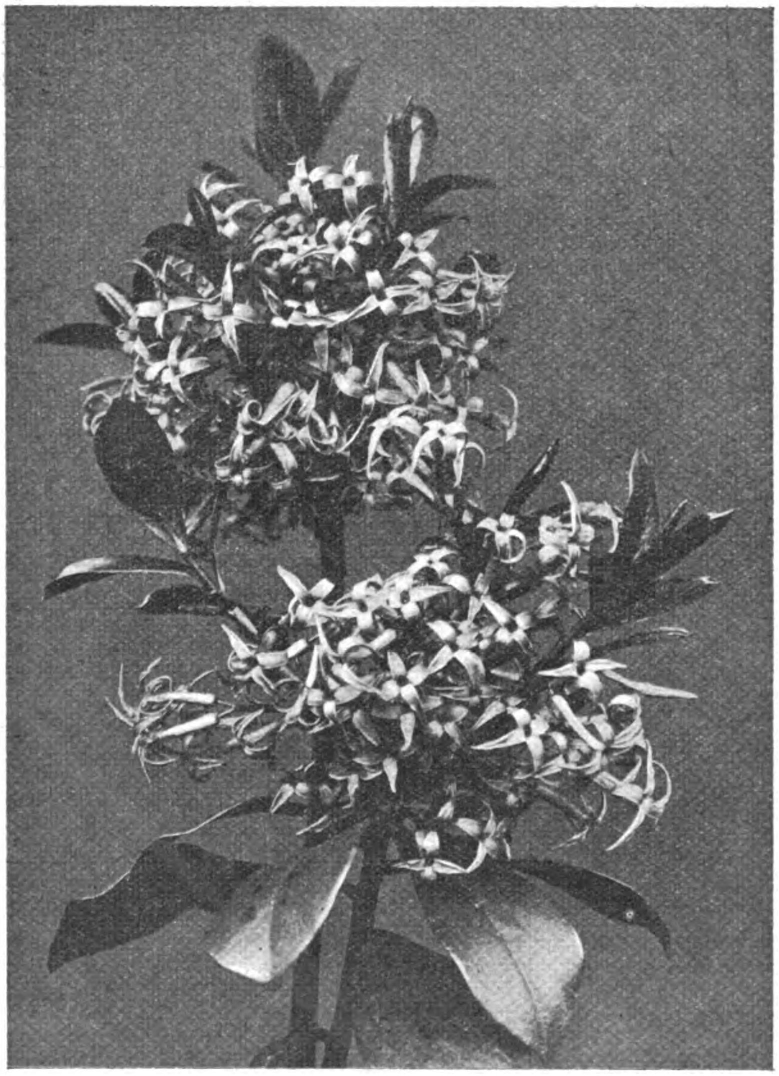

FIG. 28.—DAPHNE LAUREOLA (see p. 68.)

ORCHID NOTES AND GLEANINGS.

ODONTONIAS ALESIA AND NESTA.

It was the opinion of the late Mr. Joseph Charlesworth that, wonderful though the improvements in Odontoglossum proper had been in size, colour and shape, the work of the hybridist had become increasingly difficult.

He maintained that the restricted size of the labellum, and the impossibility of expanding it, beyond a certain limit, by intercrossing Odontoglossums, always fell short of the ideal floral beauty aimed at; furthermore, that the best results from Odontoglossum could only be attained by the introduction of large-flowered Miltonia, when the secondary crosses of the class known as Odontonia would give what would be practically the finest and richest coloured Odontoglossums in enlarged size, and more particularly in the large Miltonia-like, orbicular, or broadly ovate labellum. The theory has been consistently acted on by Messrs. Charlesworth and Co., who have sent first flowers of their two latest novelties which demonstrate a great success, the parents used being also selected hybrids raised by Messrs. Charlesworth and Co.

Odontonia Nesta.—This hybrid, raised between Odontonia Gladys (M. Bleuana × Odm. eximum), and Odm. St. George (Alexandrina × eximum) is a noble flower, three-and-three-quarter inches wide and the lip one-and-three-quarter inch across, almost circular in outline, and not crimped. The sepals and petals are bright ruby purple with a few thin white lines and white margins. The finely expanded labellum is ruby-purple with a series of white concentric lines; it has a band of white in front and a white margin. The finest Odm. eximum shows largely in the general appearance of the flower, but with all the parts much broader and flatly arranged.

Odontonia Alesia.—This hybrid is the result of crossing Odontonia Milly (M. Bleuana × Odm. percultum) and Odm. Llewellyn (amabile × Georgius Rex). The flower is three-and-three-quarter inches across and the labellum over one-and-a-half inch wide. The sepals and petals are deep ruby purple with a few white markings and blush-white tips. The basal half of the lip is coloured like the petals, the broad front half and margins of the side lobes being pure white.

ALPINE GARDEN.

ANEMONE PULSATILLA (THE PASQUE FLOWER).

ALTHOUGH so well known in gardens, I believe that comparatively few people are acquainted with the Pasque Flower as a British wild plant. It is much more commonly distributed over various hills and moors in Central Europe, and also well known in Russia, whence it stretches still further eastward, and occurs plentifully in slightly varying forms in the Himalayas and in China.

According to popular belief this plant owes its introduction to England to the Roman occupation of these Islands, which belief gains credibility from the fact that all its best-known stations in this country are in the vicinity of ancient Roman fortifications, as is well shown in the accompanying photograph (Fig. 29), the last knoll of the undulating ground—of the Chilterns—being covered from March to April with untold thousands of its satiny purple flowers, displaying their golden-tasselled centres to every scanty ray of sunshine during that fickle season. Scientists, however, discredit its Roman introduction, and regard the plant as a true British wildling.

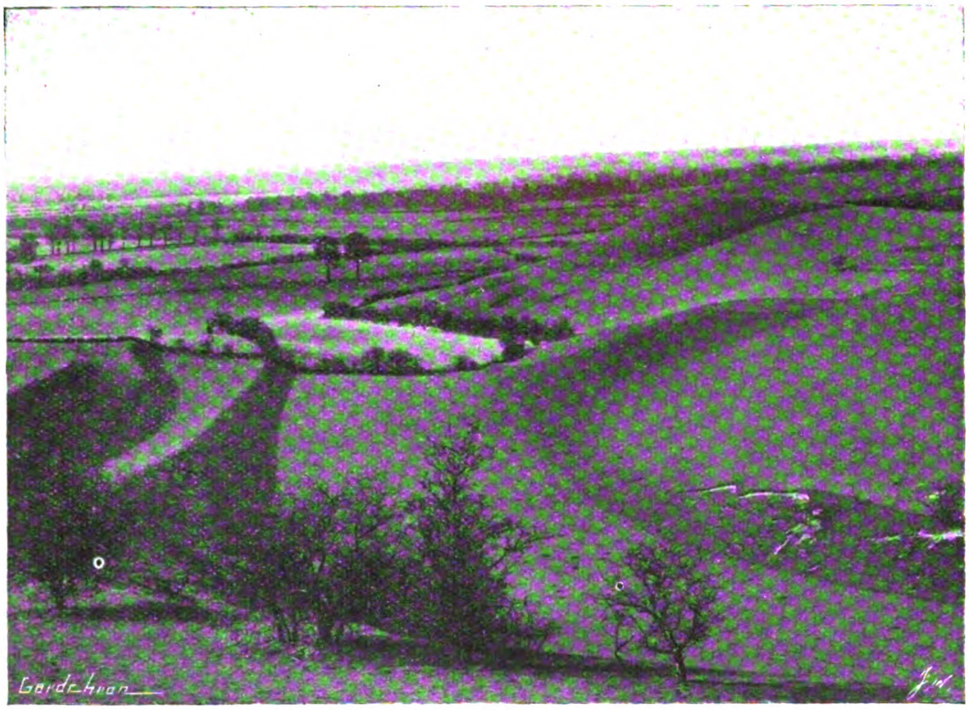

FIG. 29. VIEW OF AN OUTLYING SPUR OF THE CHILTERNS WHERE ANEMONE PULSATILLA GROWS WILD IN ABUNDANCE.

In bygone days the plant was valued, apart from its short-stemmed flowers, for the production of a fine green dye, which among other usages was employed for the colouring of Easter eggs, whence its popular name of Pasque Flower.

The British type of the plant, as I know it, is peculiar for its extreme dwarfness, so well illustrated in (Fig. 30), and its peculiarity appears to be consistent under cultivation in gardens, from which fact I conclude that the tall-growing clumps so frequently seen in our gardens owe their origin to plants introduced from the Continent, where my son and my partner collected a number of specimens, which we have grown side by side with the British collected plants and with others grown from seeds collected from the wild plant in this country. Already the Continental-collected form is scarcely distinguishable from the one cultivated for so long in our gardens, whilst plants of truly British origin have retained their dwarf and compact habit, and far deeper and richer colour of the flowers.

Our British wild form seems to confine its efforts to making a single rosette of four or five small, Carrot-like leaves of silky texture closely pressed to the ground, from which springs, as a rule, but a single two-inch or three-inch stem, carrying the satiny flower more or less upright, and of a deep, violet-purple colour. Under cultivation I find that several crowns are commonly produced, and that flowers are produced in succession for a considerably longer period than in the wild state, but the dwarf habit is maintained. This I suppose to be due to the less severe conditions of life in a garden, where the absence of grasses and other competing plants considerably reduces the struggle for existence, quite apart from the absence of sheep which keep the turf of the chalky hills, this plant selects for its habitat, to a lawn-like shortness.

On the borders of Hertfordshire and Bedfordshire, where this strong colony survives, the country people know it as "Dane's Blood" or "Crocus," and declare that the plant only occurs where the blood of Danish invaders was freely spilt in bygone ages. Curiously enough, in another part of Hertfordshire where Aconitum Napellus has one of its rare southern Stations, the same name and legend is applied to that plant.

Colour variation in the British wild plant seems to be unknown, but the Continental forms provide a considerable range of colour variation, and white, soft pink, and reddish-brown forms may be found in the wild state as well as under cultivation.

My first acquaintance with Anemone Pulsatilla dates from my early Continental schooldays, when on a beautiful morning in early May I discovered my first plants on a Heath-grown moorland, in sandy, peaty soil. I well remember that day, for did I not capture, with pride, five half-grown adders and was bitten by the sixth!

At all the British stations I know the Pasque Flower grows on the thinnest, chalkiest soil, and I find that under cultivation Anemone Pulsatilla appreciates mortar rubble or crushed limestone freely incorporated in its rooting medium, and a dryish, sunny position. The plant offers no particular difficulty to the cultivator, and clumps that have overgrown their position may be carefully divided and replanted directly flowering is over, but dividing and replanting is sure to end in failure if attempted in any other season. Colour variations may be reproduced from root cuttings taken off, and treated in the usual manner at the season I have mentioned, and these will result in small flowering plants by the next spring. Seeds sown so soon as ripe germinate freely, and a certain percentage will produce their first flower within eighteen months of sowing, but the seeds of the colour varieties cannot be relied upon to reproduce themselves entirely true to form. *W. E. Th. Ingwerson.*

LINUM FLAVUM.

THIS species is one of the prettiest of the yellow Flaxes for the rock garden and is very easily raised from seeds, sown either in the open or under glass. The plant is not perfectly hardy; I have had old plants for several years but have ultimately lost all of them during exceptionally severe winters. On the contrary, seedlings have always withstood these same winters, a circumstance we very frequently find with many plants.

L. flavum has not quite such large flowers as those of L. campanulatum, so justly praised by Mr. Ralph R. Arnold on page 21, nor of the shrubby L. arboreum, which is, I think, a little hardier than its allies just mentioned, but they are numerously produced and are of a good yellow, so that a fair-sized plant is quite effective in the rock garden.

The plant usually grows about six inches in height, but small plants will flower at three or four inches. The late Mr. Farrer refers to L. flavum as being ten inches high, but it has always been less with me. He also writes of L. campanulatum as "not to be separated from this," but I do not consider them the same, though they have some resemblance. L. flavum, as I have grown and known it, has good, rather deep green foliage, much broader, of course, than that of such well-known species of Flax as L. alpinum or L. perenne.

I find L. flavum more perennial on dry, gritty soil in the rock garden than anywhere else, and that it prefers full sun. As already mentioned, L. flavum is easily raised from seeds. If the soil is light, self-sown seedlings frequently appear near the parent plants, so that the losses of old specimens are generally easily replaced.

The native habitats of L. flavum are Germany to Russia, and it may seem surprising that it should sometimes suffer from our winters, especially as it is quite herbaceous, but probably the losses are due more to the changeable conditions which prevail during that season with us than to any other cause. *S. Arnott.*

HUTCHINSIA ALPINA.

THIS little member of the Cruciferae, sometimes known as Noccea alpina, is a delightful subject for a cool, moist spot in the lower parts of the rock garden; the small flowers, produced in great quantities, and of the purest white, are in striking contrast to the deep green foliage. The plant only reaches a height of two or three inches, and soon forms a dense mat under congenial conditions, its requirements being shade and moisture. Nearly allied to Iberis, this plant is generally distributed over Cental and Southern Europe. Hutchinsia alpina is very easily propagated by division or from cuttings. *R. E. A.*

A SUCCESSFUL TREE COLONIST IN SOUTH AFRICA.

A REMARKABLE example of an imported tree finding a congenial home has taken place here in Port Elizabeth and surroundings.

Two generations ago a Mrs. Geard sowed some seeds of Acacia Cyclops, and two trees were the result of that sowing. To-day this Acacia abounds in this locality. It does not go far inland, because, I presume, it cannot withstand the frosts. It does not appear to be comfortable for more than a few miles inland. It is known locally as the "Willow," which, to some extent, it resembles in the bark and stem; and, to a smaller extent, in the foliage. Still, there is a similarity even in the foliage to some species of Salix, though the leaf is thicker and harder than in any Willow that I know.

The wood is of no use except for firewood, and, if it were of any value it is generally too thin to be serviceable. It is very hard, and to look at a pole, with its large, dark brown heart, one would think it would make durable and satisfactory fencing poles, but it is cheaper to buy the incomparable Sneezwood, Pteroxylon utile, for this hard-looking Acacia only lasts about two years in the ground. The tree reaches no great height—about an average of thirty feet.

Here and there is to be seen a good specimen with spreading branches, but its general characteristic is that of a big bush. It is rather short-lived, but reproduces itself with marvellous rapidity and amazing prodigality. After a fire—when the seeds are not wholly destroyed—a crop of seedlings spring up as thickly as sown Barley. The inflorescence is insignificant. This is remarkable, for Australia has given us such glorious yellow Acacias. This plant has just a little, globular flower, which is insignificant and hardly visible. But the tree is an abundant cropper, and there never seems to be a bad season. The seeds are small, about the size of Wheat, and they are edible. Doves and other grain-eating birds devour them. I have seen turkeys on the branches looking for them and fowls pick them up eagerly. I do not know whether they have nutritive properties or not, but I do know that numbers pass through the bodies of birds undigested, and that is the method of distribution. These seedlings spring up everywhere—in flower-pots, in the gardens, on the veldt, and wherever they can get root-hold. In the open veldt the cattle keep them down, as they like the young foliage; but let a plot be fenced in, especially in the adjoining township—Walmer—and there is soon a fine crop, which in a very few years gives a lot of trouble in clearing.

In its young state the foliage is a vivid green, quite the best colour of any of the trees grown here, except the two or three species of Ficus and, where they will succeed, Pinus insignis and Cupressus macrocarpa.

This "Willow" makes quite a good hedge for a time, but after a few years an occasional plant dies, so for that reason it is no longer used for such purpose; in fact, it has become so common that it is not planted at all, but that does not trouble it, for it just comes up where it will. Further, it withstands our sea winds better than any plant we have. When we get a strong south-easter—our sea winds—and we very often do, unless the wind is accompanied by, or immediately followed by, rain, almost everything which is exposed is more or less burned by the saline matter carried by these winds, but the "Willow" seems to enjoy them as Charles Kingsley used to enjoy your easterly winds.

In former years, before there was any thought of making a seaside resort at the southern end of this city, this Acacia grew and flourished and increased until it practically covered the whole beach. Now it has had to make way for drives, promenades and lawns, in which are planted other things.

The common or garden Willow cannot be tolerated in the company of the Palm, the Hibiscus, and other members of *élite* families. But nothing is looking so much at home as does the tree under notice. It, however, forms the background of this pleasure resort, and a big background it is: it is fully a dozen miles in depth, and it must be nearly as much wide. This A. Cyclops is the biggest factor in one of the world's successful reclamation undertakings. Years ago—and not many years ago—this area consisted of sand-dunes that were steadily advancing towards the town. The sand from the ocean was thrown on to the beach and the winds did the rest. After some attempts made by the local body to fix the sand, the work was given over to the Forest Department, and was carried out by that department. Railway lines were laid down in order to take the city's refuse and deposit it where the work was going on. This was spread over the sand and kept in position by temporary Wattle fences until the seedlings were high enough to hold their own, or the grasses established. This went on until the whole area was covered, and the sand-dunes have given place to an extensive forest, mainly—I should rather say overwhelmingly—of Acacia Cyclops. This forest is still under the Forest Department, and all possible precautions are taken against fire; permits have to be obtained to hunt game, so the control is as good as it can be. Firewood is sold from this plantation, and, when I was there last, charcoal-burning was being carried on.

It does not seem long since a few of us, under the ægis of the late Mr. Russell Hallack, went into that locality looking for Gladiolus Milleri, Satyrium princeps, and another fragrant Orchid in places where the sand had not reached. I shall never forget the glare of the sun and sand and the "tired feeling" one got in walking through the soft sand. To-day this whole area is an expanse of restful green, providing a sanctuary for birds, a retreat for game, and, I believe, a happy hunting ground for snakes.

I cannot find any account of this A. Cyclops in Maiden's work, and it is only mentioned in the Kew *Handbook*. Not being of any appreciable value for tanning, or for building, and having flowers of no beauty, I presume it has not been considered worthy of special attention. I rather think, by the brief account given by Mr. Maiden of A. Cunninghamii that it is our A. Cyclops. We, of course, may all be wrong, but it is hardly likely that our authorities would err in this respect. If it is the A. Cunninghamii of Maiden then it hails from Central New South Wales and Central Queensland. But, be that as it may, it is here, and, as MacMahon said, it remains here, and is so well-established that it is hard to realise that it is not indigenous. *C. E. B., Port Elizabeth, South Africa.*

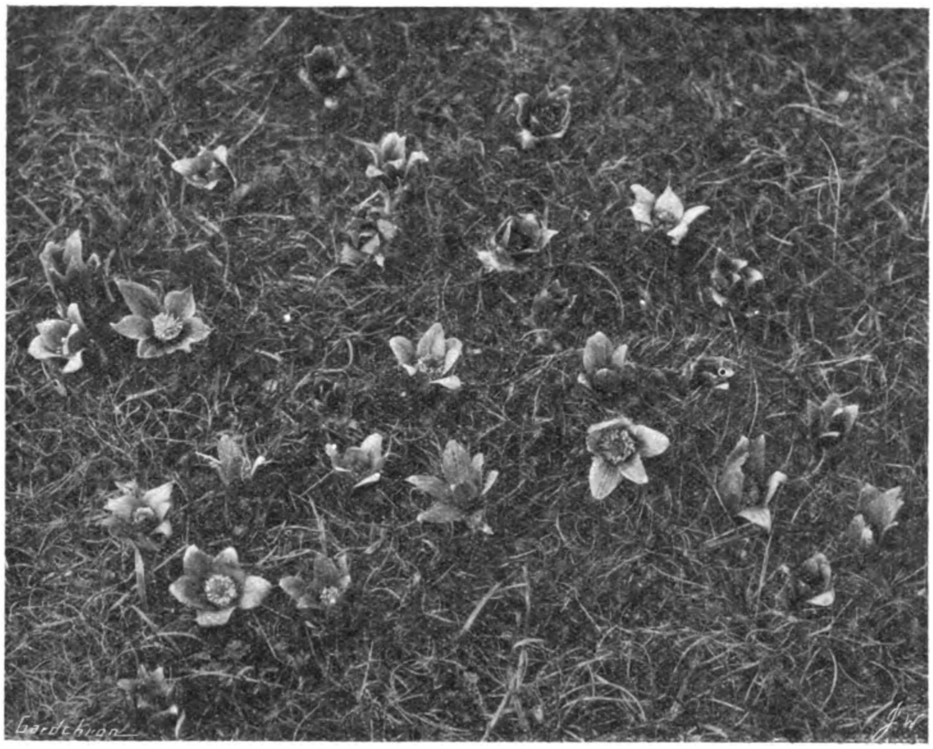

FIG. 30.—ANEMONE PULSATILLA AMONG THE GRASS ON THE CHILTERNS.

NOTICES OF BOOKS.

Sweet Peas.

A USEFUL little work entitled *Sweet Pea Culture*, by Mr. Donald Allan, is published by Messrs. Dobbie and Co., Ltd., Edinburgh. The author states that the work is a record of his practical experience during the past twenty years, "and as nearly in the nature of a fire-side talk as possible." Mr. Allan deals with all phases of Sweet Pea culture, including the cultivation of the plant in the open, in pots under glass for exhibition, in trenches under glass, and the cutting, packing, and arranging of the flowers for exhibition. There is a list of the most reliable varieties for cultivation in their respective colours, and some valuable hints on pests and diseases. Several excellent illustrations accompany the text.

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* *Sweet Pea Culture.* By Donald Allan. Dobbie and Co., Ltd., Edinburgh. Price 6d.

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THE CONTROL OF THE NARCISSUS EELWORM.*

MORE than seven years have passed since the control of the Narcissus eelworm (Tylenchus devastatrix) was first adopted on a commercial scale in this country (in the late autumn of 1917) and details of the treatment have appeared from time to time in the horticultural press. The present occasion, which was the outcome of accepting the invitation of the Chairman of the Technical Committee—perhaps all too hurriedly—offers an opportunity of reviewing the past seven years' work. I shall at once free myself from such strict demands as would be necessary if the subject were to be treated from a purely scientific aspect. True, the effect of hot water on plant life opens up many interesting fields of study, and there are many problems still awaiting solution, yet at such a meeting as this, it would doubtless be more advantageous to view the matter under review from the growers' standpoint, and in so doing clear up a few of the difficulties—many of them not real difficulties—and offer a little general advice to those whose work in an advisory capacity brings them into touch with bulb growers. Much of the information, I must confess, is not new, and already well-known amongst the majority of those bulb growers who have had experience with the treatment.

My own active association with the disease began in the summer of 1916, and, as a result of carefully controlled experiments conducted that year with hot water, over distinct ranges of time and temperature, it was ultimately found that by soaking Narcissus bulbs in water at a temperature of 110° to 111° Fahrenheit, for three hours, the eelworm could be destroyed without injury to the growth of the plant; and that if the temperature were increased a degree or two, damage to the growth of the bulb resulted, or if, on the other hand, the temperature ran a degree or two lower, that the eelworms were not totally destroyed. It was obvious that if the treatment was ever to be adopted on a commercial scale an apparatus would be needed by means of which the grower, with the minimum of vexation, could keep the desired temperature day in, day out, or from week to week if need be.

There are three types of sterilising plant specially equipped for the treatment of Narcissus bulbs, and, in so far as this concerns us, I need only deal with two of them. The other, although very efficient in its work, is rather costly to construct, and the running expenses are comparatively high, as machinery is required to circulate the water in two distinct circuits. The two types of apparatus in common use, but which I do not propose to describe in detail, are the Hearson Bulb Bath and the Barford and Perkins Steriliser for Bulbs. The Hearson Bulb Bath is a very capable invention and the uniform temperature of the water is controlled by The Hearson Capsule Regulator, similar in construction to the one this firm fits to their well-known incubators and scientific apparatus. The fuel employed for heating the water may be coal, gas, acetylene, petrol, or paraffin. The maximum size consistent with the effectual working of the plant is, however, restricted to a capacity of about fifty gallons, in which about one-hundredweight-and-a-half of bulbs may be treated at one soaking. There are many growers who employ two or more of these baths to meet their requirements, but now that acreages of Daffodils are being considerably increased, there is room for a larger type of plant; if possible, one, unlike the type previously referred to, and not dependent upon machinery, which, as we are all aware, is liable to break down when it is most needed. Messrs. Barford and Perkins interested themselves in the treatment, and after much research conducted by Mr. Frank Perkins, B.A., a director of the firm, a highly satisfactory apparatus was evolved which possesses many advantages, in that the cost of treatment is very low, there is practically no wear and tear, and the management is most simple. The apparatus consists of a boiler for supplying steam to heat the water in the tank or tanks, and a steam coil and special patented arrangement of valves for controlling the temperature.

You will therefore see that the grower is well equipped with special apparatus, the Hearson Bulb Bath being made in sizes to take from seven lbs. to one-and-a-half cwts. of bulbs, and the Barford and Perkins Sterilising Plant constructed in two standard sizes with a soaking capacity of five cwts. and from eight cwts. to ten cwts. respectively; this firm, however, will undertake the erection, as they have already done, of sterilising apparatus to hold far greater quantities than those mentioned. Whether a grower is interested in a few square yards of Daffodils or a hundred acres or more, he is well catered for in the form of special apparatus for the treatment of his stocks. The cost of the treatment is trifling when compared with the present day value of the bulbs.

The time when the treatment should be carried out is of considerable importance, and many growers have still to learn—should I say "realise," for the information has often been given—that the full benefits of the treatment are to be obtained only if the bulbs are subjected to the sterilisation process whilst they are in a dormant state. So soon as the bulbs are lifted they should be freed from soil and stored in a perfectly dry, cool and airy shed. It is, of course, taken for granted that the bulbs are harvested at the right time; that they have not been allowed to re-root before lifting, on the one hand, and that care has been taken not to lift them prematurely on the other. Particular attention is required in the harvesting of Narcissus poeticus ornatus and the poeticus hybrids, as these have a comparatively short dormant period. The best guide is to lift directly the foliage ripens off, but sometimes ornatus will readily re-root if the weather during June is wet. My remarks, unless otherwise stated, will be confined to bulbs which have been lifted in the right condition.

It is, I believe, well known that the development of the embryo flower and foliage takes place after the bulbs have been lifted. At least you can see no visible signs of the embryo growth when the dormant bulb is cut open and examined immediately upon lifting. It is under the storage conditions that the young flower bud and leaves are formed, and that the new root tissue is in the initial stages of development. It may be taken as a general guide that the treatment should not be commenced until the embryo flower bud is easily discernible to the naked eye, a condition which may readily be ascertained by cutting open a few bulbs longitudinally and examining them at intervals. In a normal season this condition does not as a rule occur before the first week in August in Lincolnshire; generally speaking this district is from two to three weeks later than the Channel Isles, Cornwall, and Scilly. If bulbs are treated before the stage referred to is reached the effect is that malformed flowers are produced, the malformation being so great that the blooms are rendered unfit for market, or they may be even killed outright. It is, however, important to state, in view of further remarks that will be made on this subject, that early treatment in no way affects the root action and foliage growth; in fact, it is the generally accepted opinion that early treatment tends in particular to promote extra growth, and the "splitting" of the bulb is also increased owing to the multiplication of internal buds which in turn give rise to offsets. It is worth while relating an experience gained with Golden Spur in Lincolnshire, a variety which is generally amongst the first to be lifted, and oftener than not the first to receive treatment. A portion of the stock was treated early—about the middle of July and about a fortnight before the normal time; the remainder received treatment during the first week in August. In the first treated batch all the flowers were killed or badly damaged, but the growth was vigorous and strong; in the other portion of the stock the flowers were marketable and again the foliage and root growth was unharmed. It is most difficult to give a hard and fast rule—certainly impossible to stage a specific time—as to when the treatment should be first commenced, for, as is well known, seasons differ considerably, and the grower must be guided by the condition of the embryo growth.

For the moment I propose to leave what may be termed the correct period of treatment and consider what happens when bulbs are treated too late—for the temptation of growers is to err on the side of lateness rather than earliness. Unless the bulbs can be stored under such perfect conditions both as regards temperature and atmospheric humidity so as to retard, or at least hold in check, the development of the embryo flower, leaf and root—a condition which is rarely met with in bulb warehouses in this country—the bulbs soon awaken into activity, and beyond a certain stage of development the effect of the heat is readily felt and the treatment may prove very injurious. Indeed, within limits not easily definable, there seems to be a stage when the young roots, flower and foliage are not affected by the treatment, yet beyond this stage all these organs prove highly susceptible to heat. In the case of the roots, the root tip is destroyed and the damage, in most cases, irreparable. The root tissue dies and the cells from which it arises seem to be incapable of repairing the damage, or at least they do not give rise to new roots. The flower bud and leaves may also be killed, or so severely injured that they do not appear above the ground for a whole season. I have on many occasions seen bulbs which have not produced a blade of foliage or a single root throughout the following year, but what is more surprising is that the

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A Lecture on "The Control of the Narcissus Eelworm," delivered before the Technical Committee of the Chamber of Horticulture, by Mr. J. K. Ramsbottom, N.D.H.

bulbs, if not disturbed the next season, will emit healthy roots and flower and grow quite normally. Just how the bulb recovers from the severe check after the season of total inactivity, both as regards leaf and root growth, is a phase of the subject worthy of more detailed investigation.

It may appear on the face of it that I am laying too much stress on advising the treatment of the bulbs whilst they are in a dormant state—I am using the term rather loosely—but it is my belief that growers should exert all their attention and care—more care than they usually do—in harvesting and storing their bulbs. Of late there has been distinct improvement in these matters, and those who have given the little extra attention required have, I believe, been well repaid for their trouble. The point which I wish to make clear is that no matter whether the treatment is carried out in August or September, harm is likely to result if the bulbs have been unduly hastened into activity, brought about by unsatisfactory lifting, harvesting, or storage. There is another aspect to this question which I trust will not be considered out of place; it very often occurs that the sterilisation process is placed in charge of an employee whose work is gauged by the condition of the crop the next spring. If damage has been done it is often thought that the employee has been negligent in his duties, yet I think it is only fair to state that if the bulbs are received for sterilisation when out of condition no such responsibility should rest with the man in charge of the treatment.

Fortunately there is a period—throughout August and September—which, all conditions being favourable, may be regarded as safe months for the operation; no harm either to foliage or root growth will result, and the bad effect on the flower is minimised. I am confining my remarks to the effect of the treatment on the general commercial varieties, although, in passing, I may mention that some of the highly-bred novelties seem to resent the treatment, even when it is carried out under the most ideal conditions. But during this period the flower seems to be the most sensitive organ, and is very readily damaged. The damage may be so slight as not to be apparent to the eye, and certainly not so great as to render the flower unfit for market. But, in my opinion, there is always a loss in the texture and quality of the flowers, so that when sent to market they do not compete favourably in price with blooms from bulbs which were planted the year before. The blooms have not the same lasting powers, and when sent on long journeys to market they tend quickly to lose their freshness—a condition which is detrimental to their sale.

When the treatment was first undertaken commercially the injury to the bloom caused grave concern among many of the growers. At that time, in Lincolnshire, the disease was rife, and the grower, with his depleted stocks, required—or was in a position—to market all his flowers. To-day, with increased acreages and healthy stocks, many find a difficulty in closely cropping all the acreage, so they wisely concentrate on those bulbs which have been down two or more years, for it is from these that the best flowers are obtained, both in quantity and in quality. The exception is with the early varieties, such as Henry Irving, Golden Spur, and possibly Sir Watkin. The two first-named varieties usually flower in the early days of March, and during the cold weather generally prevailing at this time no difficulty is experienced in keeping the picking well in hand, for most of the blooms are gleaned from the field whilst in bud and opened for market in warm greenhouses or sheds.

(To be continued.)

BULB GARDEN.

NARCISSUS TRIMON.

Narcissus triandrus is one of the most charming of Daffodils, dainty in form and habit, and exquisite in its delicate colouring. N. Bulbocodium var. monophyllus is the Algerian form of the Hoop Petticoat Daffodil, which, considering its lowly stature, has large blooms, the crown being very conspicuous; the floral colouring is white. These two Daffodils—N. triandus and N. B. monophyllus—have been combined in Narcissus Trimon, a graceful little Daffodil. In the Royal Horticultural Society's list of Daffodil names N. Trimon is credited to Mr. Alfred Tait. The illustration (Fig. 31) shows this hybrid as grown by Miss Willmott, V.M.H., in her famous garden at Great Warley, Essex.

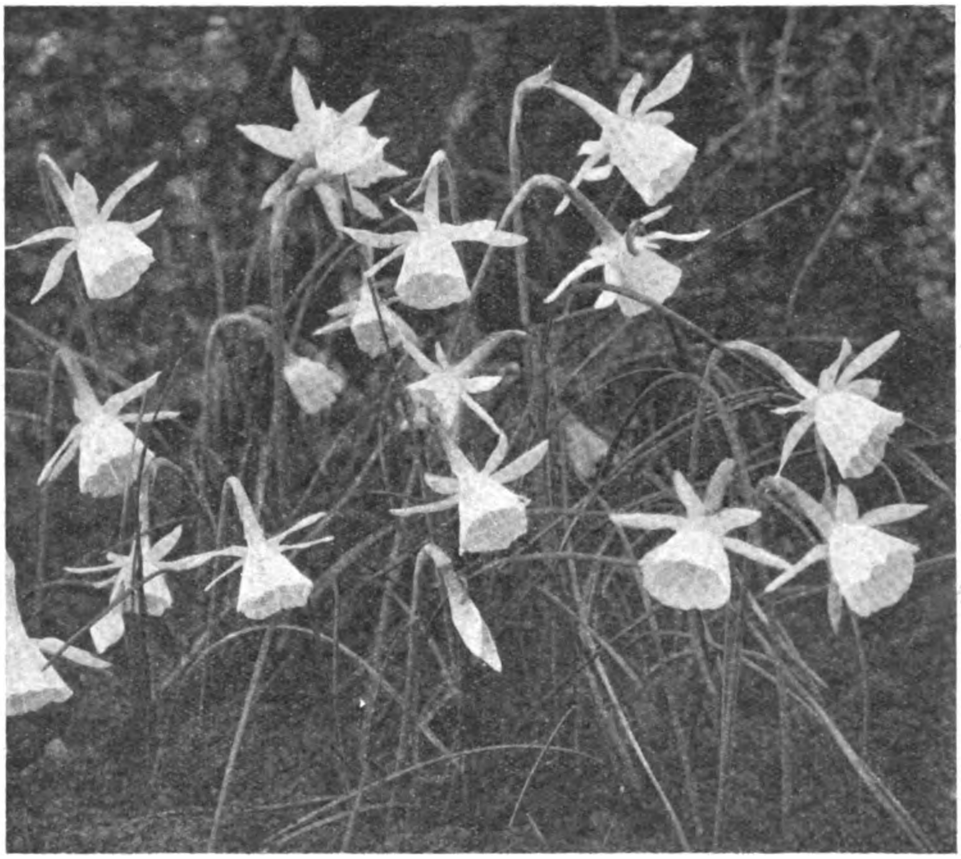

FIG 31.—NARCISSUS TRIMON.
(N. triandrus × N. Bulbocodium var. monophyllus.)

NARCISSUS BULBOCODIUM CITRINUS.

I have for a long time considered Narcissus Bulbocodium citrinus the most satisfactory member of this Daffodil for naturalising in the garden. I have known several gardens where the variety citrinus has increased freely by self-sown seeds and offsets, while the golden-yellow form refused to accommodate itself to the conditions and dwindled away until it was lost.

I have specially in view two instances. In one garden on a rockery bed one bulb of N. B. citrinus became the parent of a flourishing and beautiful colony; in the other some half-dozen bulbs to begin with were the progenitors of some hundreds of bulbs which even sprung up, grew and flowered in a gravel path by the side of the border in which the originals were planted. The golden-yellow form was of no permanent value in either of these gardens after a year or two. The white one seems too tender for most places when grown in the open. *S. Arnott.*

ALLIUM SUBHIRSUTUM.

The spring-flowering Allium subhirsutum is very rarely seen in gardens, but generally attracts the admiration of lovers of hardy flowers with its elegant, slender habit and its numerous white blooms. It has ordinarily grown from nine inches to twelve inches high with me, and for years I have considered it one of my prettiest spring-flowering bulbous plants for the border or rock garden.

There are far more showy Alliums than A. subhirsutum, but we have none, I think, more graceful than this.

It is a great pity that some of the Alliums are not more sought after for planting. There are a few valuable species among those generally obtainable, but there must be a considerable variety among those which are not in commerce. Such plants as A. descendens or A. sphaerocephalum deserve far more consideration than they receive. Even the old A. Moly seldom figures in modern gardens, but it is a plant by no means to be despised.

TULIPA SYLVESTRIS.

Claimed as an indigenous plant and, at any rate, naturalised in some parts of Britain, this pretty species of Tulip is worthy of inclusion in the garden and more especially in the woodland or as a plant for naturalising in grass, for it increases very rapidly and easily, and takes care of itself efficiently. The leaves appear early in the year and are followed in April by the bright-yellow flowers.

Produced singly or in pairs and sometimes even three on one stem, the flowers droop somewhat, and nod with every breeze.

This Tulip seeds freely and bulbs raised from seeds will attain to flowering size in a comparatively short time.

Wherever planted, the bulbs of T. sylvestris should remain undisturbed. *Ralph E Arnold.*

GOVERNMENT BOTANIC GARDENS.*

(Continued from page 62.)

It is sometimes believed that because, by an equally easy transition, such a "physic garden" could develop into a botanic garden, there may be some essential connection between "medicine" and "botany." While it is true that some five botanic gardens in Europe out of six began as "physic gardens," the connection between "botany" and "medicine" was really accidental. The cultivation of "esculent plants" was attended to as carefully in monastic gardens as was that of "medicinal plants." If the cultivation of "herbs of healing" were due to a conscious ecclesiastical effort to place the use of drugs on a higher plane than in pagan days, the cultivation of food-plants was an equally conscious endeavour to preserve something worth saving from the wreck of the Western Empire. In the "physic gardens" to which these monastic "herbularies" gave rise, there was the same combined practical cultivation and phytological study of vegetables and drugs; the same equal attention to the maintenance of health and the treatment of disease. The urgency of the need for botanical aid, in which renaissance "phytology" stood, was less in connection with new drugs than in connection with new food and food-accessories, like the Potato, the Topinambour, Cocoa, Tea, Tobacco, and so many more, then for the first time finding their way to Europe.

This alliance of the mediæval art of "phytology" with the renaissance science of "botanicey" was really a reversion to an attitude manifested in Greece some eighteen centuries earlier. The garden formed by Aristotle, in which his pupil Theophrastus discoursed περί φυτῶν, was nearer in purpose to a modern botanic garden than any "physic garden" of the sixteenth century. This explains Rousseau's remark that Theophrastus was the only "botanist" the ancient world produced. Theophrastus, alone among classical writers, dealt with plants as living things rather than as sources of useful products. What we learn of his doctrine shows that he was inspired by "scientific curiosity." His teaching was as philosophical in spirit as the teaching of botany is to-day. If, since the middle of the seventeenth century the "botanist" has been also a "phytologist," we have to admit that Li in the days of peripatetic philosophy the "phytologist" was what the "botanist" is in the twentieth century.

Some of the plants used by Theophrastus to illustrate botanical facts show that his garden contained "coronary" as well as "esculent" and "medicinal" plants. This does not imply, however, that his enclosure was a "garden" in the renaissance sense. The Greeks and Latins could garden well; they had mastered the art of making domesticated plants thrive. They grew in their enclosures many "coronary" plants for their intrinsic beauty or for their scent. But the intellectual pleasure these "herbs of grace" afforded was tempered by their suitability for the making of wreaths. The classical householder did not "garden finely," he made no conscious effort to dispose the "coronary" plants he cultivated so as to produce a pleasing general effect. Nor did mediæval monastic enclosures do more in this direction. A faith that strove to wean the thoughts of believers from this imperfect world paid but little attention to what the unconverted considered "herbs of grace." It did, indeed, condone the cultivation of some "coronary plants," not because of their "grace," but owing to their association with legends concerning Our Lady and with traditions as to the lives and deaths of saints and martyrs. The impulse that, in renaissance days, led men and women of means and taste "to garden finely" was not identical with the incentive to form "physic gardens." The formation of enclosures to form intellectual pleasure and satisfy artistic desires was an amplification of the classical regard for "coronary" plants rather than a development of monastic practice. That amplification was due to the use of classical "herbs of grace and faith" in attempts to reproduce those Oriental "paradises" whose existence was attested in works that were canonical and whose nature could be gleaned from accounts of Arab culture.

When the makers of renaissance "pleasaunces" happened to be imbued with "scientific curiosity" as well as with "artistic skill," such establishments became at once as truly botanic gardens as any of those that had originally been "physic gardens." The renown, in their day, of gardens like that of John Brancion in Flanders, that of Cardinal Farnese at Rome, that which the Burgomaster of Terneuzen put at the disposal of Pastor Peter Hondius, that of John Goodyer in Hampshire—to mention but a few private establishments which chanced to be almost contemporary—was at least equal to that of the gardens attached to Universities like those of Padua, Pisa or Leiden; those of Paris, Montpellier, or Oxford. Though the "physic gardens" attached to Universities have so often continued to exist as Botanic Gardens, while the private "pleasaunces" that were botanic gardens from the time they were formed rarely managed to survive, the difference in their fates was due to the character of their ownership rather than to the nature of their origin. Two instances from English botanical history may suffice to explain the situation. The private garden of John Gerard, herbalist of Holborn, one of the best known "physic gardens" in this country at the close of the sixteenth century, ceased to exist after its owner's death. On the other hand, an eighteenth century English "pleasure garden," which owed its origin to the artistic instinct, and its conversion into a botanic garden to the scientific curiosity of an enlightened Princess, enjoys still a renown wider than that of any other botanic garden in the Empire, and is regarded by strangers as second to no botanic garden in the world.

The absence of allusions to other classical gardens in which plants were grown to gratify the "scientific curiosity" of those who visited them, suggests that the idea underlying the formation of the one in which Theophrastus lectured may have been peculiar to Aristotle. Egypt had at least one garden which combined to some extent the features of a "physic garden" and a "pleasaunce." Babylon, it appears, had its "paradise." The medical writings of India and Assyria suggest that they may have had "physic gardens." But it is difficult to suggest an exotic source for Aristotle's inspiration, and we are only prevented from feeling assured that it originated with him because the same conception happened to take concrete form in the Western Hemisphere. When Europeans reached America, Mexico could boast the possession of two botanic gardens, designed to satisfy both the economic and the scientific curiosity of Montezuma's subjects. Spain, after her conquest of that kingdom, did what she could to maintain and preserve one of these gardens.

The idea which had guided Aristotle and inspired the rulers of Mexico occurred once more to those English planters in the West Indies who, in 1764, established in the grounds of Government House at St. Vincent a garden stocked with useful and ornamental plants, to illustrate what the West Indian colonies could produce, and to demonstrate what plants of exotic origin might be grown in the West Indies with advantage to the inhabitants. Those who founded this garden were, apparently, actuated by more than an economic purpose; the designation they gave it indicates that they hoped the new garden might also satisfy scientific curiosity. Their action was but a further instance of that sympathy with the improvement of natural knowledge manifested by West Indian planters when they gave the financial assistance which ensured the publication of scientific treatises dealing with the natural history of Jamaica, Barbados, the Bahamas and Carolina. The well-known works of Sloane, Hughes, Brown, and Catesby were prepared in emulation of the more famous ones dealing with the natural history of Malabar and the Moluccas, prepared by servants of the Dutch East Indian Company. The appearance of these latter works by Rheede and Rumphius had not conveyed to English merchants in the East Indies the lesson they taught English planters in the West Indies. The "scientific curiosity" of the English East India Company in the natural products of its territories, if it existed at all, was more than satisfied by what its Netherlands rival had done. But when English planters in the West Indies went a step further than Dutch merchants in the East Indies had gone, they supplied the two competing Eastern corporations with food for thought. The Dutch East India Company, whose example as regards natural history surveys had been copied in the West Indies, did not pay the latter the compliment of copying at once the West Indian idea of establishing a botanic garden. The English East India Company, which had not thought it necessary to make a survey of the resources of its possessions, followed the example set by the West Indies so far as the establishment of experimental gardens was concerned.

(To be continued.)

KEW NOTES.

THE HIMALAYAN HOUSE.

The Himalayan House at Kew forms a part of the famous Temperate House, which is by far the largest glasshouse devoted to plant cultivation in the world, its length being 582 feet, its greatest width 138 feet, and the height in the centre sixty feet. Thus it occupies an area of nearly two acres. The building was commenced in 1861 and it was not completed until the north wing, known as the Himalayan House, was added in 1898.

The Himalayan House is planted mostly with Rhododendrons, many of which have grown to a very large size. The tallest specimens are of Rhododendron arboreum type, one of R. arboreum var. roseum being some twenty-five feet high, and at the present time these plants are covered with flower buds, promising a glorious display in March. In all there are some eighty or ninety species of Rhododendrons in this large house, and they include the members of the genus which are too tender to survive severe winters out-of-doors at Kew, yet only need the protection of a cool house.

No genus of plants has created more interest among gardeners during recent years than Rhododendrons, and the assemblage of species in this one house shows how diverse the members are. Many of them carry handsome foliage of extraordinary size, and of these the largest-leaved species is R. sinogrande, the Kew specimen of which is some six-and-a-half feet high. R. Falconeri is another big-leaved member of the family, which also includes R. grande, the large, handsome leaves of which have a beautiful silvery reverse. R. sino-grande forms a tree in its native habitat some twenty-five feet high. It was discovered by Mr. George Forrest in 1922 on the Shweli-Salween Divide, Yunnan, China, at an altitude of 11,000 feet. The flowers vary from white to clear yellow with a crimson blotch.

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* The Sir George Birdwood Memorial Lecture, delivered before the Royal Society of Arts (Indian Section), on Friday, January 9, 1925, by Lt.-Col. Sir David Prain, C.M.G., C.I.E., LL.D., F.L.S., F.R.S., late Director of the Royal Botanic Gardens, Kew.

R. Falconeri is one of the older introduced species, and the tree grows some twenty to thirty feet high, but the Kew specimen is not nearly so tall as that. It has creamy-white flowers with a purple blotch, and there are forms with a lilac shade in the flowers.

Some of the Rhododendrons in the Himalayan House are type specimens; for example, the plant of R. serotinium, which is stated by some to be a late-flowering form of R. decorum. This plant, however, differs from its allies, R. decorum and R. Fortunei, in flowering in August, indeed it is the latest blooming species of all the Rhododendrons. There is also the original plant of R. yunannense, which has made a big bush some ten feet through the head and more in height. This species was discovered by Delavay in 1884 in Yunnan and again by Wilson in 1900 and by Forrest in 1906. As the plant is said to grow some ten to twelve feet high in its native habitat, the Kew specimen has already reached its maximum size, although, like some other plants, it may grow bigger in cultivation than when wild.

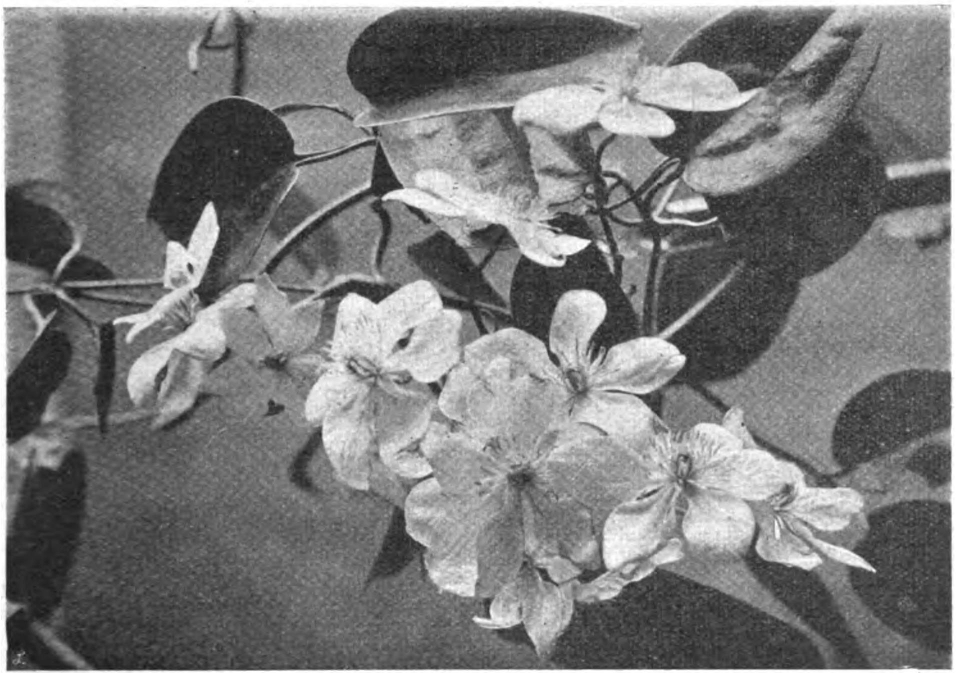


FIG. 32.—CLEMATIS ARMANDII.

Of the other species there is a beautiful specimen of R. Delavayi var. album and another of the type R. ciliicalyx, which is one of the most distinct of all Rhododendrons in its polished bark of a pale mahogany colour. This species sheds its bark annually after the manner of Arbutus Menziesii, and only a few of the shreds of the old bark, which is dark coloured, remain at this season. This also is a Chinese species and makes a shrub some six to eight feet tall, and the Kew plant is about this stature. The flowers are white with a yellow blotch. The older-introduced R. formosum from the Himalayas is a fragrant-flowered species with white blooms tinged with yellow and rose. The Kew specimen is remarkably healthy and the whole of the plant is covered with fat flower buds. Of a different type is R. campylocarpum, a yellow-flowered species. This has a very distinct habit because of the short, round, glaucous leaves, hanging down almost at right-angles to the bud which they surround.

The full beauty of the plants in this big glass house is seen in March and onwards when the majority of the Rhododendrons are in bloom, and it is well worth a visit if only to see the magnificent specimen of the variety Gill's Triumph, which is one of the finest hybrid Rhododendrons ever raised, the parents being R. Griffithianum crossed with R. Thomsonii. The plant, which is in perfect health, is smothered with its flower buds, that later will expand into large trusses of blood-red blossoms.

The Rhododendrons do not occupy the house exclusively. It contains a remarkable specimen of the Himalayan Palm, Trachycarpus excelsa (syn. Chamaerops Fortunei) which has attained a height of some thirty-five feet, nearly to the top of the house. The stem is bare of foliage almost the whole of its length and is surmounted by the usual crown of leaves forming a tuft. Another interesting specimen is a plant of Erica melanthera, which is now fifteen feet high and covered with the lovely pure white flowers that have a conspicuous dark centre, which seems, at a cursory glance, to be almost black, but a closer examination reveals that this centre is really the cluster of dark crimson anthers. This fine plant was grown from a pot specimen planted out some five years ago, and those who wish to embellish a cool greenhouse or conservatory with a handsome plant that flowers at this season are recommended to grow this Heath planted out in a border. When grown in Cornwall and other mild parts the strong sunlight has the effect of causing the flowers of this Heath to be tinged with Rose.

The Himalayan Oak, Quercus incana, of which there is a very healthy specimen, is interesting in being the principal source of charcoal in India.

A plant of especial interest to gardeners is the true Cordyline indivisa, which is totally unlike that usually grown under this name, the spurious plant being merely a form of C. australis. C. indivisa may be identified at once by the yellow veins on the foliage, which is much broader than in C. australis and the true species is altogether a handsomer plant. The Kew specimen is some four to five feet high.

The iron pillars supporting the roof are furnished with a number of beautiful flowering plants, including Jasminum Sieboldianum, J. primulinum, Holboellia latifolia, Vitis Henryana, Rosa laevigata, Lapageria rosea and its white variety alba, and Clematis Armandii (Fig. 32). The last is an evergreen species introduced from western China by Mr. E. H. Wilson when plant collecting on behalf of Messrs. James Veitch and Sons. Like many other species of Clematis the flowers are white; they are produced in threes on short foot-stalks. The species is very attractive when in bloom, early in April, but the flowers do not constitute the whole of the plant's attractiveness, for the evergreen foliage is very beautiful in winter, and in mild districts, where the plant will succeed in the open, it may be recommended for the special purpose of covering pergolas and arches for the sake of its winter effect.

The plants of Lapageria in the Himalayan section of the Temperate house are not so large as those in the main building where they are grown in great perfection at the entrance on the Sion House side.

There is one feature in the Himalayan House which is not common in the greenhouses at Kew—a little natural water-pool surrounded by rock work that just now is very pleasingly studded with the flowers of Primula Juliae. The interesting aquatic Aroid, Lysichitum camtschatcense, grows and flowers well in this little pool as is well shown in the illustration reproduced in *Gard. Chron.*, May 21, 1904, Fig. 140. The plant is entirely deciduous in winter so that no traces of it were apparent at the time of my visit.

Nothing but praise can be given for the excellent condition which this stately house presents even now; when the plants are in flower it must indeed be beautiful and would well repay a visit by all who are interested in beautiful plants and Rhododendrons in particular. *T.*

A CARNATION COMPETITION.

In their autumn catalogue Messrs. Allwood Brothers arranged a competition for the purpose of discovering the most popular varieties of Carnations in the several groups of this flower. Competitors were required to fill in the names of the varieties on cards provided for the purpose, the names to be placed in what the competitors considered the order of merit. Prizes were offered for those whose lists were most nearly those indicated by the majority of votes. Messrs. Allwood Bros. inform us that there were 38,000 entries, and the prizes have been awarded as follow; the "best" varieties and the votes recorded in their favour are also appended.

Perpetual Flowering Varieties.

Market growers will disagree with the results in this section, because productiveness, as a rule, is their principal guide, whereas the private grower places form and size very high, and also colour and perfume. Practically every known variety gained some votes.

The great surprise was that such popular old varieties as Enchantress Supreme, White Enchantress, Salmon Enchantress, White Wonder, Mikado, Triumph, etc., should not win positions, while expensive new varieties such as Laddie, Topsy, Chintz, and Maine Sunshine should do so well; the competition proves that good, new kinds are quickly recognised.

Only three American varieties gained honour, viz., Laddie, Maine Sunshine, and Topsy. Public taste has changed; the old white and pink varieties no longer find favour.

1, Edward Allwood, 9,472 votes; 2, Mary Allwood, 8,940; 3, Laddie, 8,700; 4, Maine Sunshine, 8,320; 5, Wivelsfield Apricot, 8,191; 6, Topsy, 7,703; 7, White Pearl, 7,644; 8, George Allwood, 7,640; 9, Wivelsfield Pink, 7,300; 10, Wivelsfield Claret, 7,141; 11, Chintz, 7,139; 12, Wivelsfield White, 7,050.

First Prize, Mr. H. Saville, The Gardens, Riddlesworth Hall, Diss, Norfolk; Second, R. A. Marshall, Esq., Little Culvender, Tunbridge Wells; Third, J. Dyer, Esq., Northfields, Tetbury, Gloucestershire.

Perpetual-Flowering Malmaisons.

The voting was naturally low, but it was surprising it should be restricted to practically ten varieties:—

Jessie Allwood, 2,082; Mrs. C. F. Raphael, 1,973; Boadicea, 1,222; Atlantic, 1,201; Oceanic, 948; Hon. Charlotte Knowles, 563.

First Prize, Mr. Hilary Stretton, The Cottage, Crow Tree, Rawdon, Leeds; Second, J. Saddler, Esq., N. Frodingham, near Duffield, N. Yorks; Third, Mr. Smith Viney, Hoyle Court Gardens, Baildon, Yorkshire.

Perpetual Border Carnations.

The voting on this new race was extraordinarily heavy, and practically every variety gained some votes. No doubt the two leading varieties gained their positions because they have the ideal habit of growth for the type. Sussex Avondale did not win a place, being too tall.

1, Sussex Beauty, 6,848; 2, Sussex Pink, 6532; 3, Sussex Leander, 5975; 4, Sussex Rosalind, 5,732; 5, Sussex Crimson, 5,685; 6, Sussex Purple, 4,879.

First Prize, Sidney L. Hogben, The Cottage, Woodhay, Windlesham, Surrey; Second, W. R. Blamey, Esq., Nanspusher Farm, Hayle, Cornwall; Third, F. H. Ducker, Esq., Brinkley, Southwell, Notts.

Border Carnations.

Good Border Carnations expected to score, such as Akbar, Mrs. A. Brotherston, Saracen, Mrs. G. D. Murray, Salmon Clove, etc., failed. Bookham White was beaten by Elaine, but Gordon Douglas well held its own in the crimsons. New varieties have to win their laurels before gaining popularity, and votes were taken on the varieties below for garden cultivation.

1, Border Yellow, 4,811 votes; 2, Elaine, 4,618; 3, Grenadier, 4,201; 4, Grey Douglas, 3,960; 5, Gordon Douglas, 3,824; 6, Innocence, 3,820; 7, Dora Blick, 3,215; 8, Rosy Morn, 3,093; 9, Bookham Salmon, 3,062; 10, Pasquin, 2,840; 11, Miss Rose Joseph, 2,630; 12, Lord Kitchener, 2,482.

First Prize, Richard C. Large, Esq., 23, Penrhys Avenue, Tylerstown, South Wales; Second, Mrs. Brockman, Panmure, Cirencester, Glos.; Third, Mr. W. M. Foulds, The Gardens, Cromlix, Dunblane, Perthshire.

Dianthus Allwoodii.

Arthur and Eleanor are outstanding varieties, but have not been before the public many seasons, so their success is very creditable; as it also is in the case of Bryan, a 1924 novelty. Mary alone of the first six varieties distributed, has won a place, Alfred easily beating Harold, the popular old white variety. Sybil is the only single-flowered variety to win a position. The entries in this section exceeded expectations, many of Messrs. Allwood Bros.' Colonial customers participating in the competition

1, Susan, 8,843 votes; 2, Arthur, 8,510; 3, Eleanor, 7,914; 4, Rhoda, 7,811; 5, Peggy, 7,528; 6, Barbara, 6,340; 7, Rufus, 5,210; 8, Sybil, 5,209; 9, Mary, 4,944; 10, Alfred, 4,832; 11, Bryan, 3,901; 12, Betty, 3,509.

First Prize, Mr. S. J. Salway, The Gardens, Cranmore Place, Chislehurst, Kent; Second, Mr. W. R. Preedy, The Gardens, Whittle Park, near Chelmsford; Third, M. C. Dear, Esq., Clerk and Steward's Office, Three Counties Mental Hospital, Arlesey, Beds.

VEGETABLE GARDEN.

HERBS.

(*Concluded from page 63.*)

Of Parsley I need write but little. All growers know its dawdling way of germinating. It is best to make two sowings, one in March and one in June, and, to be perfectly safe, it is wise to make a sowing in a cold frame in August to ensure a supply of leaves in late spring. Parsley is the one thing amongst herbs that the gardener must be able to supply every day of the year, for, in spite of their indifference to the value of many herbs, English cooks will have Parsley. The plant needs a deep soil, not too rich, and it responds to occasional applications of soot.

Burnet likes a chalky soil, but its cultition is usually much neglected. The young leaves have something of the flavour of Cucumber, and are used, like Borage, to give flavour to claret and other wine cups.

Rampion should be sown thinly in April or May in rather shady borders, and the root should be fit for use from November to April. Sometimes it is eaten raw, sometimes boiled for winter salad. Occasionally the leaves are eaten, and I see no reason why poached eggs and Rampion should not be as delicious as poached eggs and Spinach.

The cheerful Marigold grows everywhere and seeds itself freely. For cooking, some affirm that the single form is better than the double, but I think the taste and smell of the petals of both are the same, and, although it does not appear to be used much in soups now, it is a gem of the herb garden, and modern doctors frequently use a lotion made from it for sprains and wounds.

"Borage for courage" is an old proverb, and once seeds are sown the plant is never lost. Its beautiful blue flowers are a great attraction, and it has another use, other than giving flavour to claret cup, as our ancestors loved to preserve the flowers and candy them for sweetmeats.

Shirrets is a herb that is grown occasionally, but more as a curiosity than for use. It is stated, however, that the Emperor Tiberius valued it so much that he accepted it as a tribute, and it was conveyed to him from Gelduba, a castle on the Rhine.

There are many salad herbs that may be raised from seeds if necessary, including Corn Salad, Chicory, Dandelion, etc., but these plants seem more in place in the kitchen garden proper than in the herb garden.

Some herbs are valued for their roots, some for their leaves, some for their flowers, and others for their seeds; and not the least is the group of aromatic herbs. The raising of plants from seeds always gives special delight, and this pleasure is heightened when the plants for whose shoots one watches are strangers. Certainly, few who are not gardeners, and probably a large number of gardeners also, have no idea what Dill, Coriander, Caraway, and Anise look like when growing. These four aromatic herbs, although of Eastern origin, do well in English gardens, but their seeds and extracts are much better known than the plants.

Dill for infants is still in fashion; the name is said to be derived from the old Saxon verb, dilla—to lull—because the seeds are soporific, and used to be given to infants to make them sleep.

Coriander has pretty, pale mauve flowers; the seeds have a very distinctive flavour, and are much used in both confectionery and vegetable preserves.

Chicory flowers provide us with the clearest blue that can be found in flowers. No one needs reminding of the uses of Chicory, and immense areas are given over to its cultivation in France.

Bergamot gives a lovely patch of crimson, and its essential oil is much used in perfumery. In America a tea is made of the aromatic leaves of one kind of Bergamot, and the preparation known as thymol is obtained from another.

Sweet Woodruff, with its dainty white flowers and clustering foliage of bright green, is more often seen in cottage gardens than in the gardens of the rich. In the flower garden it is apt to become weedy, but if a corner of the herb garden can be given it where it can grow at will, no one will begrudge the room it takes. The green leaves when bruised have healing properties, and were formerly used in the making of wine and cool drinks.

Although the visible plays a large part in the enjoyment of our gardens, much of their charm depends on the invisible. Is there not something even more wonderful and subtle about the unseen gift of fragrance than about the more striking gift of colour? There are few better places for the study of scents than the herb garden, and one will soon discover the value of leaf scents and that they are permanent, whereas those of flowers are frequently evanescent. Leaf scents may have to be coaxed out by bruising or pressing, but they are there, and the great point is that long after the summer flower scents have departed we can enjoy the perfumes of the sweet-leaved herbs such as Rosemary, Sweet-Bay, Thyme, Lavender, Southernwood, Balm, Myrtle and Cotton Lavender. It is pleasant to know that sweet odours are not only harmless but actually beneficial, and no doubt if our florists were to make more of a feature of providing us with hardy durable, fragrant foliage, the public would appreciate it.

A belief that sweet scents are wholesome is very widespread. The Malays stuff their beds and pillows with the fragrant herb from which patchouli is made, and the name they have given the plant means fragrant and healthy. Eucalyptol has been detected in Rosemary, Sage and Lavender, and many flower and leaf scents are known to be both antiseptic and germicidal. Modern science has proved, too, that ozone is developed when the sun shines on most kinds of fragrant plants such as scented flowers, Fir and Pine trees, and sweet herbs generally. This makes the hours spent in a sunny, fragrant garden more delightful than ever.

There are still hosts of herbs both interesting and useful, such as Angelica, Vervain, Fumitory and Samphire amongst native plants, and Liquorice, Hemp, Ignatius Beans, and Tobacco amongst exotics, which give choice of material for furnishing the herb garden or medicinal border, and the collector will experience joy in continually adding some new kind to his or her collection. *W. Auton.*

SPROUTING BROCCOLI.

The White Sprouting Broccoli is one of the most useful vegetables for mid-winter.

A sowing made early in April will provide plants which may be set out in their permanent quarters early in June. This crop will produce sprouts for use during December. Later sowings will be needed for the supply of large establishments.

This type of Broccoli is often planted much too thickly; a space of three feet between the rows and the same distance from plant to plant is not too much to allow for their full development on highly cultivated land. Crowded foliage quickly decays during bad weather, and the sprouts become discoloured and useless. More produce may be gathered from one strong specimen than from two weakly plants.

In the event of very severe weather plants in full bearing may be afforded some protection. Spare lights arranged over a framework of wood may be used for this purpose. All covering should be removed on the approach of milder weather, as continued dampness will cause the sprouts to decay.

Early Purple Sprouting Broccoli is an early, compact growing type, the greens being much esteemed at Christmas. An April sowing will be sufficient in many gardens. The plants may be set out during June, and these will yield a profusion of excellent sprouts during the winter. A useful succession to this variety is the more largely grown Purple Sprouting, which is most suitable for planting in exposed gardens.

This Broccoli is very hardy and extremely productive during the spring, and of delicious flavour when cooked. *C. Ruse, The Hyde Gardens, near Luton.*

HORSERADISH ON RIDGES.

One is forced to admit in regard to this plant that it may easily become a troublesome weed of the most enduring nature; nevertheless, the necessities of practically every large establishment in the country make its inclusion in gardens imperative. Its successful production presents no difficulties, yet its potentialities as a source of trouble are so substantial that special consideration of its requirements are not merely wise, but essential. There are two methods of procedure which will yield excellent roots, and choice may be made between them as fancy or convenience dictates. One of these, by far the older it may be said in passing, is on flat beds to be planted afresh every year or alternate year, and the other is on ridges, and because the latter has proved by far the more satisfactory in my experience, I purpose to deal with it alone.

The first preparatory steps are taken about the end of January, and if possible the planting is done at the middle of February, but it is improbable that these dates have material importance, provided that everything is completed by the middle of March. A trench three inches deep and fifteen inches wide is taken out, the bottom forked over roughly, thoroughly rotted manure put in and trodden firmly to the normal surrounding level; nothing need be said relative to the length of the trench because that must vary with the demands of each place. The next process is the simple one of building up the ridge with sides sloping gently inwards and upwards to a width of ten inches, or thereabouts, at the top, which must be flat or, and rather preferable taking one season with another, with a fall of one inch from the sides to the middle. The ridge should be just solid enough to maintain its shape, and any soil mixture containing flaky refuse-manure or leaf-mould and sand may be used in its construction.

The final phase of the preparatory process is reached when the planting is done. For this, thong-like roots about five inches long and somewhat smaller in size than an ordinary pencil are cut squarely at the top and slantingly at the bottom, in exactly the same manner as one prepares cuttings or whips of Seakale. Three inches from the top edge of the ridge on each side insert the cuttings in a sharply oblique position at nine inches apart to such depth that the top is just below the soil level. The end of the season will find splendid produce from which supplies may be drawn quickly at need throughout the ensuing year. By erecting one and breaking down another ridge each year an unbroken succession is commanded, and given reasonable care in the clearance, not a bit of root will remain in the ground to grow into a pestiferous weed. The whole of the culture is so simple, so clean, and so effective, that the wonder is that it has not been adopted long since in all kitchen gardens. *W. T.*

HARDY FRUIT GARDEN.

THE YELLOW PERSHORE PLUM.

In the November "Occasional Notes" issued by the Royal Agricultural Society, a brief allusion is made to the Yellow Pershore Plum in regard to the state of the trees to be seen in the Gloucester and Worcester district. The statement is made that for the greater part, trees are shockingly neglected, damaged branches and open wounds are to be seen everywhere, yet there is relative freedom from Silver-Leaf disease and other serious troubles.

To anyone living in the district this is but a re-statement of what is already well known, but at the same time the facts give rise to wonderment. It seems as though the people have learnt to put so much faith in the Pershore Plum that they just leave the trees to look after themselves, and rely on them to yield a crop equal to any of the superior varieties that are pampered, more or less, by cultural skill, and the old Pershore seldom fails. Indeed, the general opinion about here is that if there are any Plums at all in a bad season, they will assuredly be Pershores. Such is fame! But it is surprising, during the fruiting season, to see old, cankery, lichen-covered, and, in many cases, hollow-trunked trees, bearing a good crop in a dilapitated orchard, and perhaps close by there is a well kept plantation of comparatively young trees of different varieties of Plums, with scarcely a peck of fruit between them. Old trees that have been cut hard back, or have had their tops blown off by gales, are remarkable in that they seem to come to life again by producing an abundance of young wood, which speedily matures and bears fruit.

It is to be wondered why this variety is not more often seen in counties other than those adjoining Worcestershire, from which it originated. One would imagine that plantations in, say, Kent for instance, would prove profitable to the commercial growers, but I have never seen the variety represented to any great extent in that county. Around Evesham and Pershore, where large areas of Pershore Plum trees are to be seen, the growers seem to put great reliance in the Pershore to yield a crop that will bring a very profitable return from the markets in neighbouring towns. It appears to have almost a trade of its own. This variety is certainly worthy of a place among culinary Plums in the garden. The medium-sized, obovate fruits ripen about mid-August, cook splendidly in a green state, long before that date—a point in its favour and one characteristic of many other varieties. *H. W. Stenning, Ebrington Hall Gardens, Campden, Glos.*

HOME CORRESPONDENCE.

The Germinating Power of Seeds.—Under this heading in *The Gardeners' Chronicle* for October 18, 1924, p. 269, Sir Herbert Maxwell makes some interesting remarks about Pyrola minor covering about a quarter-of-an-acre of the drier and rocky outcrop of an old lake or loch bottom that had been drained forty-six years previously. It so happens that I was puzzled myself about the habitat of this species. Sir Herbert Maxwell states that it is not a bog plant. In 1917 I found a fine colony of this species, the plants twelve inches high, in the shade of Pine trees, and getting light only from the east. The situation was a dry one, and the Pine trees were cut down during the war. Not a plant of the Pyrola remained in the third summer afterwards, though I noted a few dwindling remnants during the second summer. Last year I found several colonies in Surrey, about a mile from the first-named colony, and all of them were growing in boggy ground under Pine trees. I had to walk warily on the top of tussocks of grass to get near them; yet some of them were carrying from twelve to nineteen flowers, with similar stems carrying the old seed pods of the previous year. Many years ago I found P. rotundifolia flowering under deciduous trees in a dry situation, and nearly a mile away the same species in boggy ground under Pine trees. I have come to the conclusion that shade is the primary requisite. I would also like to suggest that the tiny seeds of these plants get attached to the feathers of birds when wet, and are sometimes carried involuntarily by them for long distances. *J. F.*

Bees and Apple Fertilisation.—I find that my bees work the Apples quite freely in some seasons but not every year, also they may be working quite well on one day but not on another. This holds good of all fruit blossom as far as my experience goes. I should say that the wild Cherry, Gean, is by far the most attractive tree to bees, in fact I find most of the garden fruit trees are quite neglected when the wild Cherries are in full bloom. I fancy very few people realise how much the flow of nectar is affected by weather conditions, and especially by temperature. Some nectar-bearing flowers require a high temperature, others require warmth and moisture combined. In some years, even when conditions are apparently quite favourable, such a fine nectar-yielding plant as White Clover fails to give a crop of honey. In certain parts of America a good yield from White Clover occurs only once in four or five years. Other well-known nectar-yielding plants and trees exhibit this same peculiarity. I cannot help thinking that the divergence of views expressed by your correspondents may be explained by the facts I have quoted as to the irregular and intermittent nectar flow. Moreover, in the spring bees will not work any flower freely unless the sun is shining. Last year my Peach trees in cold orchard houses were in full bloom during a spell of sunless weather. Hardly a bee visited them, and pollination had to be done with a rabbit's tail. In 1922 the houses were so full of bees that we had to wait till quite late before shutting up for the night. I think there can be no doubt whatever that bees are most valuable to the fruit grower. The Americans, who are pretty observant and up-to-date, certainly have no doubts on the subject, and vast numbers of colonies of bees are kept in America solely for fertilising work with no thought of getting a paying yield of honey. *Charles G. A. Nix, Tilgate Forest Lodge, Crawley.*

The Best Early Apple.—The notes by *Seasider*, in your issue of January 17, p. 43, are of considerable interest, as one is frequently asked the question by intending planters and others: "What is the best early Apple?" Here we plump for Irish Peach, eaten from the tree, of course. This is the first Apple to ripen that is really worth eating. It is crisp, juicy, and has a distinct and very refined flavour, but it is a poor cropper. I was surprised to read that with *Seasider* it ripened either at the same time, or after, Mr. Gladstone, because here it comes in well before Mr. Gladstone. Has not your correspondent made an error here? I should like to hear the evidence of other growers on the point. Mr. Gladstone I rank as useful and of fair flavour, and similar faint praise I would accord to the eating qualities of Beauty of Bath and others named by *Seasider*, but I am heartily with him when he "gets a move on" to St. Everard, which is undoubtedly the best early Apple, and a big step in advance among fruits of recent introduction. It does not surprise me to learn that this variety is in big demand for planting. *F. Herbert Chapman.*

SOCIETIES.

ROYAL HORTICULTURAL.

January 27.—The fortnightly meeting at the Royal Horticultural Hall, Vincent Square, Westminster, on the above date, proved very attractive, and one of the outstanding features was the group of Hyacinths, Tulips, etc., from Messrs. Sutton and Sons, which was awarded a Gold Medal. Greenhouse plants and rock garden exhibits were shown in numbers.

Orchid Committee.

Present: Messrs. C. J. Lucas (in the chair), Gurney Wilson (Secretary), Jas. O'Brien, H. T. Pitt, Frederick Jas. Hanbury, R. Brooman White, Henry H. Smith, S. W. Flory, Fred K. Sander, J. E. Shill, Chas. H. Curtis, A. McBean, John C. Cowan, Stuart H. Low, T. Armstrong, and C. Cookson.

First-Class Certificates.

Cypripedium Mrs. William Pickup (Alcibiades × Thisbe), from Dr. Craven Moore, Victoria Park, Manchester. A grand Cypripedium with a very large dorsal sepal, which is broader than in most of the varieties of its class, well-proportioned and flatly displayed, the basal half tinged with rose and the upper part pure white. Two-thirds of the surface has spotted lines of rich claret-red. The broad petals and lip are tinged with red brown; the petals are spotted on the lower half.

Odontoglossum Ceramic (Watsonianum × eximium), from Messrs. J. and A. McBean. A grand Odontoglossum; the plant shown had a noble spike of richly coloured flowers. The sepals and petals are dark claret purple with white markings; the white lip is coloured ruby-claret at the base.

Awards of Merit.

Odontonia Nesta (Odontonia Gladys × Odm. St. George), from Messrs. Charlesworth and Co., Ltd., Haywards Heath. A very fine hybrid merging the best characters of Miltonia and Odontoglossum. The small plant, with its first flowers, had very showy blooms with sepals and petals rich ruby purple relieved by a few white markings and with white tips. The large, orbicular lip has a white ground, coloured ruby-purple around the crest, and with rose purple blotching on the basal half of the large, white, front lobe.

Brasso-Cattleya Bianca var. Aureamine, from Messrs. J. and A. McBean. In size and form one of the finest crosses of the section. The plant bore a spike of two immense blush-white flowers with pale yellow disc to the lip; and another two-flowered spike in bud.

Groups.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), was awarded a Silver Banksian Medal for a fine, well-arranged group, in which both species and hybrids were well represented. Among the former the display of the neat little Epidendrum Endresii and a dozen pretty varieties of E. Endresi-Wallisii gave a fine proof of the beauty and variety to be obtained by judicious crossing, scarcely two being alike in colour. Another rare species of the Endresii section was E. pumilum, one of the rarest of the class. The showiest of the hybrids were Odontoglossum harvengtense Pitt's variety, with a grand spike of canary-yellow flowers with a few red blotches; Odontonia Sheila (M. Bleuana × Odm. Lambeauianum) with a fine round flower blotched with ruby red on a white ground; Odontoglossum Nell Gwynne (crispum F. K. Sander cross) with pretty dark-coloured flowers, and Cymbidium Queen of Gatton, var. Goldfinch. A good selection of Cypripediums was also shown, the best being C. Memoria F. M. Ogilvie.

Messrs. Sanders, St. Albans, were awarded a Silver-Gilt Banksian Medal for an excellent exhibit. Among the fine Cymbidiums was the handsome C. Louis Sander (Ceres × Alexanderi), a grand rose-pink variety with ruby blotches on the lip. The collection contained many handsome Odontoglossums, Odontiodas, and Cypripediums, specially noteworthy among the last-named being C. Cappamagna var. Christmas Cheer, with immense dorsal sepal, which has a purple centre; C. Carola was equally good. Calanthe Baron Schröder represented one of the finest of the Calanthes, and among the species the now rare Angraecum superbum, forms of Oncidium splendidum and other Oncidiums were noted.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for an interesting group of showy Odontoglossums and Odontiodas, together with a selection of Cypripediums. Interesting exhibits were the scarlet Oncidioda Cooksoniae and its further cross with Oncidium macranthum—Oncidioda Stuart Low, a much stronger grower, with a trailing spike of showy red flowers. A good selection of Cymbidiums was also staged, the new C. Giant Rose having a grand spike of bright rose flowers. The cross is Alexanderi × Schlegelii. Over fifty fine forms of Odontoglossum were shown in this group.

Other Exhibits.

Messrs. Cowan and Co., Southgate, showed good plants of Cypripedium bourtonense, Cattleya Tityus, and Brasso-Cattleya British Queen.

Messrs. Armstrong and Brown, Tunbridge Wells, showed the charming Cymbidium Alexanderi Peach Blossom, with very large flowers tinted as the name indicates; Cypripedium Conference (Chardwar Bulldog × Hera-Mannii), with showy dorsal sepal and broad petals and lip; and a noble form of C. Lord Wolmer var. Orbia.

Messrs. Flory and Black, Slough, showed a selection of good hybrids, including Cypripedium J. M. Black

Sir Arthur Watson, C.B.E., Rathgar, Finchley (gr. Mr. Bush), sent a very fine specimen of Lycaste Skinneri delicatum.

Messrs. J. and A. McBean showed a finely grown white Lycaste Skinneri.

W. R. Fasey, Esq., showed Odontioda Colinge, Fasey's variety, a rich red flower with light margins.

Floral Committee.

Section A.—*Present*: Messrs. H. B. May (in the chair), J. F. McLeod. A. Turner, H. J. Jones, Wm. Howe, Hugh Dickson, E. R. Janes, Montagu Allwood, Jas. B. Riding, F. Streeter, F. G. Cousins, W. B. Gingell, D. B. Crane, W. P. Thomson, and D. Ingamells.

Section B.—*Present*; Mr. Gerald W. Loder (in the chair), Sir W. Lawrence, Messrs. James Hudson, G. Reuthe, W. B. Cranfield, E. H. Wilding, T. Hay, A. Bedford, Reginald Cory, C. T. Musgrave, F. G. Preston, E. A. Bowles, R. C. Notcutt, and W. J. Bean.

Awards of Merit.

Iris Wedgewood.—A delightful, early-flowering Iris originating from a cross between I. tingitana and possibly I. Xiphium. The colour is a charming shade of silvery-blue, and doubtless its free-flowering habit together with its earliness will commend this flower to market growers and amateurs alike. Shown by Messrs. Lowe, Shawyer and Van Waveren.

Crocus chrysanthus Bumble Blue.—Another pretty variety of this species of which Mr. Bowles has already shown many beautiful forms. The colour of the expanded flower is buttery-yellow, and the outer row of perianth segments is finely marked with bronze-purple, the inner ones being of the same colour on both surfaces. There was one growth in the pot which had produced a semi-double flower with ten perianth segments in two whorls of five. Shown by E. A. Bowles, Esq., Myddleton House, Waltham Cross.

Carnation Hercules.—A good scarlet variety slightly flushed with rose. The flowers are large and solid and the stem is strong. Shown by Mr. G. Carpenter, West Hall, Byfleet.

Groups.

Messrs. Sutton and Sons made a gorgeous display of Hyacinths, Tulips, and other flowering, bulbous plants, which were staged with artistic skill. The bulbs were shown in bowls of fibre, and amongst Hyacinths the Cynthella varieties in pink, blue, white, Rose, and yellow shades were particularly pleasing; these had been grown from prepared bulbs. Double Tulips were represented by the varieties Tournesol, Murillo, Fireball, and Salvator Rosa; Proserpine, rose; Mon Tresor, the best early yellow; Joost van Vondel, white; and Ibis, a beautiful deep rose and white bloom, were a few of the single flowers, while Daffodils, Crocuses, Irises, Lily of the Valley, and Freesias were also shown in good form. (Gold Medal.)

Messrs. Stuart, Low and Co. displayed Carnations and Cyclamen, and among the former were fine vases of Eileen Low, Sir Philip Sassoon, a deep, crimson bloom of good form, and White Pearl. The Cyclamens were of exceptional quality, freely flowered, and represented by the varieties Vulcan, crimson; Pink Pearl, salmon-pink; Cherry Ripe, cerise; and Giant White. (Silver Banksian Medal.)

Mr. J. W. Forsyth brought a group of Cyclamen representing frilled-petalled varieties in white, salmon-pink, and rose shades. (Silver Banksian Medal.)

Just near, Messrs. Allwood Bros. staged Carnations of high quality, the varieties Master Michael Stoop, rose-cerise; Laddie, and Edward Allwood being especially noteworthy. (Silver Banksian Medal.)

Mr. C. Engelmann showed Janet, cerise; Red Laddie, and Topsy in his collection of Carnations. (Bronze Banksian Medal.)

Forced shrubs, principally of Azaleas, were shown by Messrs. Wm. Cutbush and Son, Ltd., who also had a very attractive rock garden planted with seasonable subjects. (Silver Banksian Medal.)

Large-flowered Azaleas, Prunus triloba, Camellia cuspidata, and Pycnostachys Daweii, were a few of the choice subjects in the exhibit staged by Messrs. L. R. Russell, Ltd. (Silver Banksian Medal.)

A low-lying table was filled with large mounds of well-grown specimens of Primula malacoides Princess Mary, interspersed with smaller groups of varieties of P. sinensis in "stellata" and other forms by Messrs. James Carter and Co. (Silver-gilt Banksian Medal.) Mr. E. J. Hicks showed a number of good Roses, of which Joanna Bridge, Mrs. H. Stevens, and Corrie Koster, a beautiful salmon-pink Polyanthus variety, are a selection. (Bronze Banksian Medal.)

Sprays of Rhododendrons cut from the open were exhibited by Messrs. R. Gill and Son; R. argenteum, cream; R. Cornubia, scarlet; and a number of "arboreum" seedlings were the chief items. The large Orange-scarlet twin-flowered Hippeastrum Aulicum also attracted attention; this species is rarely seen, and proves hardy in favoured positions in Cornwall. (Bronze Banksian Medal.)

Messrs. Bakers showed a small rock-garden, Primula Wanda being represented by drifts of blue flowers.

Other exhibitors of hardy flowers were Messrs. Barr and Sons, who showed a number of interesting species of Crocuses and Hellebores (Silver Banksian Medal);

Messrs. WATERER, SONS, AND CRISP, Ltd. (Silver Banksian Medal), with a comprehensive display, rich in Irises, Crocus, and Narcissus species; Mr. F. G. WOOD, who had a neat group of hardy flowers (Bronze Banksian Medal); Messrs. CARTER PAGE AND Co., (Bronze Banksian Medal); and Messrs. J. CHEAL AND SONS, Ltd. (Bronze Banksian Medal).

Conifers and other hardy shrubs, such as Skimmia japonica and Erica mediterranea hybrida were shown by THE ORPINGTON NURSERIES COMPANY (Bronze Banksian Medal); rare shrubs and alpines were grouped in a display from Mr. G. REUTHE (Silver Banksian Medal.)

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix (chairman), W. Lobjoit, A. H. Pearson, Geo. F. Tinley, P. D. Tuckett, S. B. Dicks, H. Prince, E. Beckett, H. V. Taylor, W. H. Divers, E. A. Bunyard, A. Bullock, and J. C. Allgrove.

An outstanding exhibit of Apples and Pears, shown by Mr. J. C. ALLGROVE, was awarded a Gold Medal. All the fruits were in splendid condition for a late January show, and they included a selection of the best late varieties in cultivation. The exhibit was very pleasingly arranged and included excellent fruits of such well-known sorts of Apples as Bramley's Seedling, Newton Wonder, Annie Elizabeth, Gascoyne's Scarlet, Lane's Prince Albert, Cox's Orange Pippin, Northern Greening, Ontario, Blenheim Pippin, Golden Noble, Belle de Boskoop, Adams's Pearmain, and Hoary Morning, which was coloured to a high degree. Choice late Pears were exhibited in the varieties Josephine de Malines, Olivier de Serres, Easter Beurré, and Duchesse de Bordeaux.

Messrs. WATERER, SONS AND CRISP exhibited some seven dishes of their new Apple John Waterer, a very large-fruiting variety of the Warner's King type.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

MR. T. B. KERR, the new Chairman of Directors, presided at a meeting of the above Society on Wednesday, the 14th inst., when Mr. J. G. Roberts, Barrhead, read a paper on "The Chemist in the Garden." The lecturer defined the modern chemist as a natural philosopher and a sceptic, whose motto was, "prove all things; hold fast to that which is good." The problem in the garden was more complex than that in the laboratory, and it was, therefore, important that the rising generation should make an endeavour to understand chemistry in its relation to horticulture. Emphasising the value of experiment, he pointed out that chemical analysis of the soil gave very little information regarding the working of soil organisms and soil fertility in relation to plant life, and the best source of reliable information was from the research station; in this connection testimony was paid to the good work accomplished at Rothamstead. Mr. Roberts then proceeded to discuss in detail the various foods upon which plant life depends. The influences of carbon-dioxide and nitrogen, which is essential for the nourishment of all living things, was discussed, and the effect of potash, lime, silica, and magnesia was commented on. Reference was made to farmyard manure, and the lecturer expressed the opinion that the gardener of the future would have to manufacture his own supplies of organic manure.

In the course of an interesting discussion which followed, Mr. Dickson pointed out that chloride of potash had the effect of softening Potato tubers, and he advocated the use of sulphide of potash. In answer to a question, Mr. Roberts explained that, while old manure had lost much of its "fiery" character, it had also lost a good deal of its value, but its condition was more favourable for the health and vigour of plants. The chairman raised the question of "finger and toe" in Turnips, and Mr. Roberts replied that the trouble could be prevented by the application of lime, which would neutralise acidity in the soil. In proposing a vote of thanks to the lecturer, Sir John Reid deplored the fact that no curative treatment had been discovered which would be effective in destroying the big-bud mite in Black Currants, one of the most popular fruits of the household.

The chairman intimated that the next lecture would be delivered by Mr. Robert Fyfe (of Messrs. Dobbie and Co., Ltd.), on February 18.

LANARK AND DISTRICT FRUIT GROWERS.

THE Annual General Meeting of the members of the above association was held recently at Lanark; Mr. Thomas Brown, in the absence of the President, presided. A deputation representing the Glasgow Fruit Brokers' Association was also present. It was reported that as the result of the meeting with the Fruit Brokers' Association more favourable rates had been secured to those growers sending consignments of Tomatos to the market in non-returnable packages (either chips or boxes). The Association had under consideration during the past year the question of the income tax assessments on fruit-growers. It was considered that, as the farmer is assessed under Schedule B. on the actual rent paid by him for his holding, the fruit-grower should be similarly treated, as farmers and fruit-growers are both occupiers of agricultural land. Representations to this effect are to be made to the authorities through the Members of Parliament for the district.

The question was also considered of having the valuation for rating purposes of glass-house and ground under fruit more equitably adjusted than at present, fruit and Tomato growers being much more highly rated than holders of agricultural land. Several points of mutual interest were discussed with the representatives of the Fruit Brokers' Association, and the following office-bearers were appointed for the ensuing year:—Hon. President, Mr. John Scott, Orchard House, Carluke; Hon. Vice-Presidents, Mr. Joseph Dyer, Kilbank, Lanark, and Mr. James T. Scott, Crossford, Carluke; Secretary and Treasurer, Mr. John Lightbody, 20, Hope Street, Lanark. Committee, Messrs. C. W. McLean, Daleville, Carluke; John Muirhead, Glencotha, Lanark; George Anderson, Well Buttslea, Kirkfieldbank; James Reid, Stockwell, Carluke; James Gilchrist, Pleasance, Kirkfieldbank; William McMorran, The Nurseries, Lanark; John B. Meikle, Pathead, Lismahayow; Robert Frame, Boreland, Braidwood; and Walter Forrest, Hut-on-Clyde, Carluke.

LAW NOTES.

SALE OF SEED POTATOS.

A FIRM of Scottish seed Potato merchants was recently convicted of an offence under the Seeds Act, 1920, in respect of the sale of a consignment of two tons of "Sharpe's Express" seed Potatos with an incorrect description of the variety.

The Seeds Act, 1920, and the Seeds Regulations, 1922, require, in the case of a sale of seed Potatos, that the seller shall make a statement in writing to the purchaser at, or before, the time of sale or delivery, containing particulars as to the class, variety, size and dressing of the Potatos. The name of the variety in this connection is not taken to be incorrectly stated if it is true in respect of ninty-seven per cent. of the total quantity sold. In the case in question the seed Potatos were estimated to have contained approximately thirty per cent. of "rogues." The defendants pleaded guilty and a fine of £5 was imposed.

WOOD BUYING DISPUTE.

THE final award has been made in a case which has aroused much interest in wood-owning and tree-buying circles in the north of Scotland. The arbiter, Mr. Robert Dunbar, Craigellachie, Morayshire, had referred to him a question involving the purchase of £90,000 worth of timber by Mr. Frank Sime, timber merchant, Inverness, from Mr. Grant, proprietor of the estate of Wester Elchies, Morayshire. The award is as follows:—The arbiter, having carefully considered the representations by Mr. Sime against his proposed findings determining value of timber to be delivered to Mr. Sime, dated November 29, 1924, and Mr. Grant's answers thereto, repels the representations for Mr. Sime. The arbiter, however, having discovered certain omissions and inaccuracies in his figures since the issuing of his proposed findings, now finds as follows:—(1) That the value of the timber marked off and delivered to Mr. Sime, as at this date, including Cardnach and Tamdhu, is £35,568 5s. 2d.; (2) That the balance of timber yet to be delivered to Mr. Sime to make up the £45,000 is therefore £9,431 14s. 10d.; and (3) That in interpreting the minute of agreement entered into between the parties, the declaration contained in clause second thereof regarding the percentage of milling or sawable timber means seventy per cent. of trees six inches or over in diameter, fourteen feet up, marked or to be marked under the contract, and not seventy per cent. of the cubical content of such trees.

The arbiter accordingly ordains Mr. Grant to mark off and deliver to Mr. Sime, by the 14th day of February, timber of the above value, £9,431 14s. 10d., keeping in view the above finding in regard to the percentage of milling and sawable timber; *quoad ultra*, repels Mr. Sime's claim and amended claim. Mr. Grant and Mr. Sime were represented by local solicitors, while Mr William Kemp (of Messrs. Kemp and Auchinachie, Keith) was clerk to the reference.

Obituary.

Field-Marshal Lord Grenfell, G.C.B., G.C.M.G.—Our readers will learn with the deepest regret of the death of Field-Marshal Lord Grenfell, who passed away on Tuesday last, at Foresters, Windlesham, aged eighty-three years. Lord Grenfell was the oldest Field-Marshal, having risen to the highest position in the Army after a distinguished military career. His military successes in Egypt and elsewhere are well known. His connection with the Royal Horticultural Society as President over a period of seven years will link his name with contemporary horticulture. During the period he held the office of President the Royal Horticultural Society was greatly indebted to him, for part of the time was during the years of the war, when his influence smoothed out many difficulties, and, although he placed the concerns of his country first, gardeners, and especially those connected with the trade, owe him a deep debt of gratitude for looking after their interests. All will remember him as a worthy gentleman possessed of an amiable personality, and one who did all in his power to advance the interests of the Royal Horticultural Society and horticulture in general, for he was deeply devoted to gardening, and spent the evening of his life amidst the peaceful pursuits of the country, and especially of his garden. His name will always be associated with the R.H.S. in the Grenfell medal, which is awarded for pictures or photographs and exhibits of a similar nature of botanical or horticultural interest.

MARKETS.

COVENT GARDEN, Tuesday, January 27, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0-18 0
elegans	10 0-12 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri	12 0-18 0
Aspidistra, green	30 0-60 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Cacti, per tray, —12's, 15's	5 0- 7 0
Crotons, per doz.	30 0-45 0
Cyclamen—	
—32's	36 0-48 0
—48's	24 0-30 0
Cyrtomium	10 0-15 0
Erica melanthera, 48's, per doz.	21 0-30 0
— —60's, per doz.	8 0-10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0- 4 0
Marguerites, white, 48's, per doz.	18 0-30 0
Nephrolepis, in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large 60's	5 0- 6 0
—small	4 0- 5 0
—72's, per tray of 15's	2 6- 3 6

Cut Flowers, etc.. Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0-24 0
—cuneatum, per doz. bun.	12 0-15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0- 3 0
med. sprays	1 6- 2 6
short ,,	0 9- 1 3
—Sprengeri, per bun.	
long sprays	1 6- 2 0
medium ,,	1 0- 1 6
short ,,	0 4- 1 0
Bouvardia, white, per doz. bun	12 0-15 0
Camellias, White, per box	3 6- 4 0
Carnations, per doz. blooms	3 0- 5 0
Croton leaves, var., doz. leaves	0 9- 2 6
Daffodils, per bunch—	1 6- 1 9
—Double Daffodils	1 6- 1 9
—Golden Spur	1 4- 1 9
—Soliel d'Or	0 8-0 10
Fern, French, per doz. bun.	0 9- 1 3
Freesia, per doz. bun.	4 0-18 0
Galax, American, green and bronze, per doz. bun.	— 3 0
French Flowers—	
Carnations, per bun	1 6- 2 0
Marigolds, per pad	7 0-10 0
Mimosa, per pad	8 0-12 0
—per bun.	1 0- 1 3
Narcissus, Paper White per pad	30 0-40 0
—doz. bun.	7 0- 9 0
Ranunculus, double scarlet, doz bun.	8 0-10 0
—Carmine, per doz. bun	8 0-12 0
Roses, Safrano per bun. of two doz. blooms	2 6- 3 6
—per pad	8 0-10 0
—Ulrich Brunner, per doz. blooms	6 0-10 0
Violets, Parma, per bun.	5 0- 6 0
—single, per pad	8 0-12 0
Lilac, Dutch, per spikes	4 0- 8 0
Lilium lancifolium album, per doz. blooms	— —
—rubrum, long, per doz. blooms	4 0- 5 0
—short ,, ,,	3 0- 4 0
Lilium longiflorum long, per doz.	11 0-12 0
short ,, ,,	10 0-12 0
Lily of the Valley, per doz. bun.	24 0-36 0
Orchids, per doz.	
—Cattleyas	24 0-30 0
—Cypripediums	5 0- 7 0
Prunus triloba (Dutch), per bun.	1 0- 1 6
Richardias (Arums) per doz.	9 0-12 0
Roses, new crop, per doz. blooms, Richmond	10 0-18 0
Ruscus, French, per bun.	1 0- 2 0
Smilax, per doz. trails	2 0- 3 0
Tulips, per bunch—	
—Couronne d'Or	2 0- 2 6
—La Reine	1 6- 2 0
—Mon Tresor	2 0- 2 6
—Prince of Austria	2 0- 2 6
—Rosina	2 0- 2 6
—Thomas Moore	1 9- 2 0
—Wm. Copland	3 0- 4 0
Violets, per doz. bun	2 0- 8 0

REMARKS.—Business for the season of the year is quite good, and a fair volume of produce is passing through the market. Apples from the North American continent are inclined to be firmer in price. Home-grown Bramley's Seedling and Newton Wonder Apples have also a better tendency, especially first grade packs. Hothouse Grapes are in good request in spite of competition of choice fruits from South Africa. Cape Peaches, Plums, Nectarines, Grapes, and Pears have met with a good reception and are generally in first-class condition. Forced Beans, Potatos, and Asparagus are a fairly good trade with a steady price level. The colder weather has tended to restrict the already short supplies of Cucumbers and quotations for these are comparatively high. Mushrooms are fairly plentiful for the time of year, but prices keep at a satisfactory level to the growers. Forced Rhubarb is moderately plentiful with a keen enquiry. Tomatos from the Canary Islands are a strong market. Salads are a steady trade, showing little or no change in values. Green vegetables, such as Brussels Sprouts and Savoys, show an improvement in demand: Cauliflowers are more plentiful. Ample stocks of Potatos are on offer, increased supplies of imported tubers tending to restrict prices slightly.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Oregon Newtown	13 0-17 0
—Newton Wonder	6 0-10 0
—Bramley's Seedling—	
—Best	12 0-14 0
—Others	6 0-10 0
—Californian Newtown	11 0-12 6
—Spitz	13 0-16 0
—Delicious	12 0-14 0
—Winesap	12 0-14 0
—Greening	30 0-36 0
—Nova Scotia—	
—Russett	25 0-30 0
—Baldwin	26 0-30 0
Bananas, singles	17 0-27 6
—doubles	17 0-27 6
Californian Pears—	
—Winter Nelis, per case	30 0-32 6
Grapes—	
—Gros Colmar	2 6- 4 0
—Belgian Colmar per lb.	2 0- 2 6
—Almeria, per barrel	30 0-35 0
Grape Fruit, Cuban	16 0-21 0
—Florida	— 25 0
Lemons, Messina, per box	8 0-10 0
Lemons	
—Murcia	12 0-13 0
—Naples	17 0-20 0
Oranges, Jaffa	14 0-16 0
—Spanish—	
—300's	15 0-30 0
—360's	14 0-20 0
—504's	13 0-18 0
Oranges—	
—Palermo, bitter	10 6-12 0
—Malaga, bitter	20 -21 0
Pines	2 0- 4 0
South African Peaches	5 0-12 0
—Plums	4 0- 8 0
Tunis Dates, per doz.	5 0- 7 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	— —
—Best	5 0- 7 0
—Others	3 6- 4 0
—Madeira, per box	4 0- 7 0
Beets, per cwt.	5 0- 6 0
Cabbage, per tally	6 0-10 0
Canary Island Tomatos	20 0-27 6
Cauliflowers, per doz.	3 0- 5 0
Forced Mint, per doz.	6 0-10 0
Celery, best, washed, per bundle	2 6- 3 0
—Second	0 10- 1 3
Chicory, per lb.	0 4- 0 5
Carrots, per cwt.	3 6- 6 0
Cucumbers, each	2 0- 3 6
Dutch Onions	10 0-12 0
Endive, per doz.	1 6- 3 0
Batavia, per doz.	— 3 0
English Asparagus—	
—Finest	7 0- 8 0
—Best	5 0- 6 0
French Asparagus—	
—Paris Green	7 6- 8 0
—Lauris	10 0-12 6
Greens, per bag	1 0- 2 0
Horseradish, per bundle	2 0- 2 6
Leeks, per doz. bundles	3 0- 4 0
Lettuce, per dozen	1 3- 1 9
—Outdoor	2 6- 3 6
Mushrooms, cups	2 6- 3 0
—broilers	1 9- 2 0
Onions, Valencia, per case	16 0-17 0
—English	12 0-14 0
Parsnips, per cwt.	4 6- 7 0
Peas, French, 18 lbs.	— 10 0
Potatos, Canary Island, per case	12 0-16 0
—Spring crop	20 0-24 0
—Azores, new, per case	25 0-30 0
—Algerian, new	0 5- 0 6
Potatos, per ton—	
—Dunbar	230 0-240 0
—King Edward	200 0-210 0
—White	90 0-200 0
—New Guernsey lb	0 10- 1 0
Radishes, doz. bun	1 3- 2 6
Rhubarb, Forced, per doz.	2 0- 2 6
Savoys, per tally	7 6-12 6
Seakale, per punnet	2 6- 3 0
Spinach, per bushel	4 6- 6 0
Sprouts, bag	2 0- 4 0
Sweet Potatos	3 0- 4 0
Turnips, per cwt.	4 0- 5 6

REMARKS.—As is usual at this particular season of the year, all flowers are very dear, and the fact that Chrysanthemums are practically finished has caused other white flowers to be in great demand. Only a few blooms of white Chrysanthemums are arriving, and these are realising from 6/- to 8/- a dozen. French Paper White Narcissus, which is in demand by florists for ground-work, is still dear, and the quality is not exceptional. There is some good Italian Stock being marketed, and the florists are using this for their floral designs. Fortunately, Daffodils are coming forward in greater quantities, and there are good numbers of Tulips, including some exceptionally fine flowers of William Copland. The Guernsey Daffodils are a little easier in price, but the English-grown flowers remain firm. Carnations are not over plentiful and those marketed are realising fair prices. There is no Lilium speciosum album available, but L. s. rubrum may be had and also L. longiflorum, although the latter is very dear; some good spikes of English-grown Lily-of-the-Valley are still available. Arums are being marketed in fairly large quantities and their prices are satisfactory to the growers, averaging about 12/- per dozen. French flowers are all dearer than usual and they include, beside Narcissi, some very fine Violets which are much larger than the English Violets: Marguerites, Mimosa, Ranunculus, Anemones and "Niggers." Dutch Lilac is a good selling line, but the quality varies considerably. With the exception of Smilax, of which the supply is rather short, there are sufficient quantities of foliage for the demand.

GLASGOW.

Business was quiet during the earlier days of the week but prices, which reflected an easier tendency, improved towards the close, and on Friday the highest quotations of the period covered by our report were realised. In the fruit department Apples were in most cases dearer, despite the arrival of 174,813 cases from the Pacific ports. Newtown Pippin, Albemarle, and Winter Greening brought 42/- per barrel: Baldwin, Stark, and Russets, 36/- to 38/-; and York Imperial 38/6. Winesap sold at 13/6 to 16/- per case; Delicious, 16/6 to 17/6; Newtown Pippin, 14/6 to 16/6; Spitzbergen, 14/- to 15/6; Rome Beauty, 12/6 to 14/6; and Grieve's Ortley, 13/6 to 15/-. Oranges continued cheap, and Grape Fruit averaged 18/- per case, while Lemons brought 12/- for best (300), 9/- to 10/- other qualities, and 6/- per box. English and Scotch Gros Colmar Grapes ranged from 2/6 to 3/6 per lb; Dutch, 1/3; and Almeria, 30/- to 36/- per barrel. Winter Nelis Pears from Rogue River made 34/-, and Washington 32/- per case. Peaches were cheap at 5/- per box.

The scarcity of Onions was again reflected in the further advance in prices, Valencia (5's) being 19/- per case and Dutch 14/6 per bag. French Beans from Madeira sold at 6/- and 7/- per box.

Consignments of cut flowers were well maintained, and consisted principally of Tulips. William Pitt ranged from 2/- to 2/6 for 6's; Bartagon, 1/6 to 2/-; Copland, 1/- to 1/6: Murillo, 1/4 to 1/6; Prince of Austria, 10d. to 1/4; Couronne d'Or, 1/- to 1/5; Flamingo, 1/2 to 1/6; Pink Darwins, 2/6 to 2/9, and Tea Rose, 1/4 to 1/6. Hyacinths varied from 10d. to 1/6 per bunch. Narcissus ornatus from 1/2 to 1/6, Golden Spur, Scotch grown, 1/2 to 1/4; English grown (with more foliage), 1/4 to 1/6. English Violets, 1/6 to 2/-; Lily-of-the-Valley, 1/6 to 1/9; Narcissus, 8/- to 9/- per dozen, and Arum Lilies, 8/6 per dozen. Special quality white Lilac realised 60/- per dozen sprays, and a small first consignment of King Alfred Daffodils brought 1/9 to 2/- 6's. Extra quality Carnations yielded from 3/- to 4/- per dozen, and ordinary from 2/- to 2/6.

TRADE NOTES.

IMPORTATION OF BULBS INTO SWITZERLAND.

INSTANCES have been brought to the notice of the Ministry of Agriculture and Fisheries during the past few months, in which consignments of bulbs from this country have been delayed entry into Switzerland owing, it is stated, to the absence of a permit from the Swiss authorities. The Ministry is informed that consignments of bulbs as well as of other plants must be accompanied by the consignor's declaration and official certificate in the form prescribed in the Phylloxera Convention, and a translation of these documents into French, German, or Italian must be furnished. The sworn declaration accepted by some countries as sufficient compliance with the requirements of the Phylloxera Convention is not accepted by the Swiss Authorities. In the absence of such declaration and certificate, the consignment will be admitted only after a permit for its importation has been obtained by the Swiss Importer from the Federal Department of Public Economy.

The issue of the necessary certificate by the Ministry involves the examination of the premises on which the bulbs or plants were grown, and a fee of two guineas is payable in respect of such inspection. After the premises have been examined and passed, any number of certificates can be issued during the following twelve months, after which a further examination will be necessary. A charge of one shilling is made for each certificate issued.

ANSWERS TO CORRESPONDENTS.

CORRECTION.—We regret that in our review of the two German gardening books, on p. 39 we ascribed the publication to the firm of Paul Parey, but it should have been the publishers of *Gartenschonheit*, with which, apparently, the former firm has nothing to do. The name is correctly given in the foot-note of the review.

CORRECTION: Mr. J. E. Tugwell points out that his employer was Col. R. F. Dudgeon, C.B., of Cargen, Dumfries, and not as stated in the paragraph referring to the presentations to Mr. Tugwell on p. 51.

NAMES OF FRUIT: *D. S. A.* Apple Scotch Bridget.

SEA SAND: *H.* Sea sand is quite suitable for all strong growing plants without previous washing, but for propagating purposes and for slow-growing plants it may be advisable to wash it.

SWEET PEAS AND MENDELISM: *B.* If you will send your name and address we will do our best to supply you with the information you require.

Communications Received.—C. B.—Mrs. H. S—A. E. B.—G. W. H.—J. W.—S. B. D.

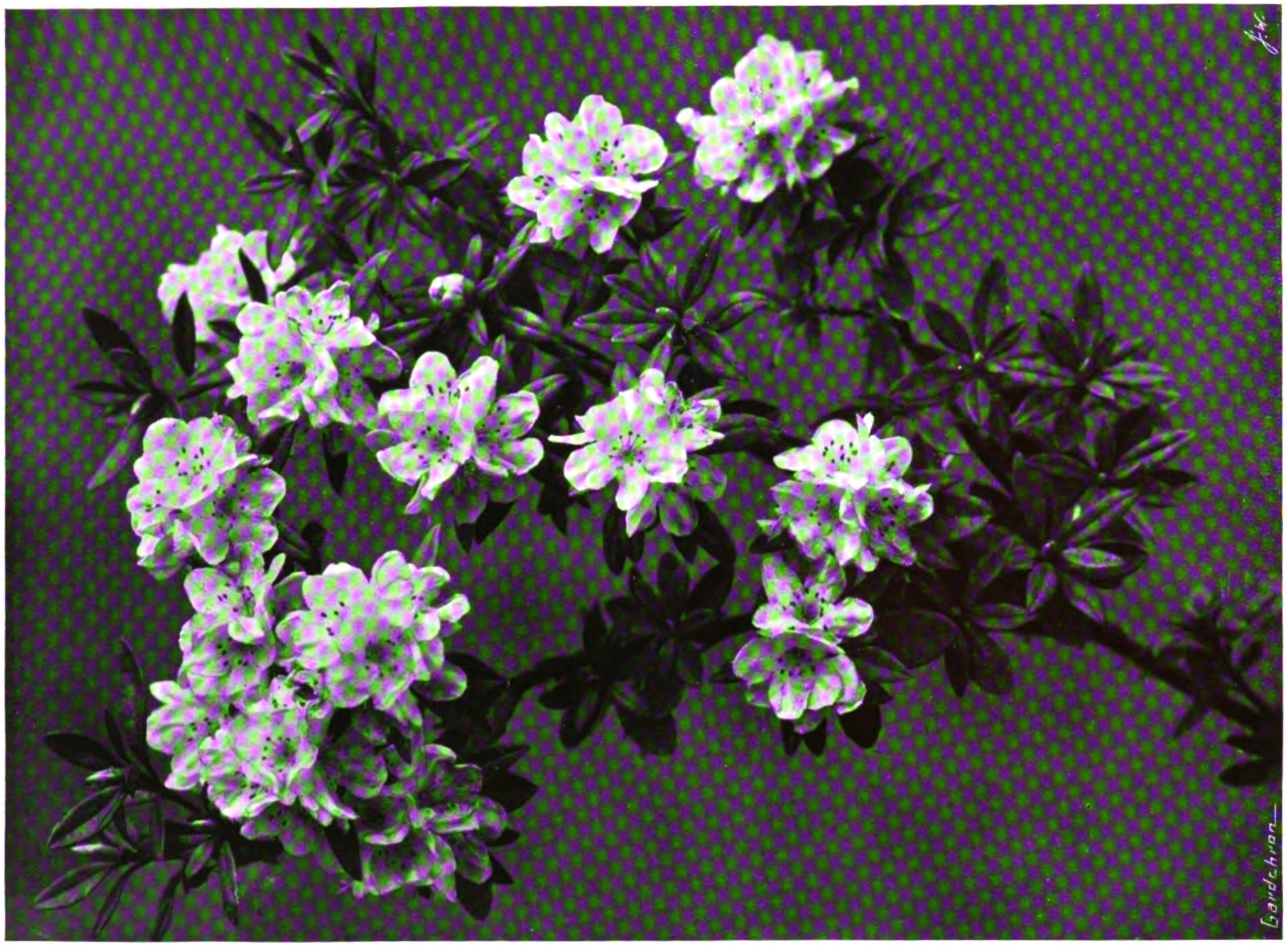
CATALOGUES RECEIVED.

Seeds.

D. G. PURDIE, 6, Waterloo Street, Glasgow.
J. R. PEARSON AND SONS, LTD., Lowdham, Notts.
W. POWER AND CO., 25, King Street, Waterford.
GRAINGER AND CO., 120, Old Christchurch Road, Bournemouth.

RICHARD MELHUISH, LTD., 50, Fetter Lane, E.C.4.—Sundries.
CLIBRANS, LTD. Altrincham.—Ornamental and forest trees, etc., Cyclamen.
H. SHOESMITH, JUNR., Mayford, Woking.—Chrysanthemums.
GODFREY AND SON, Exmouth, Devon.—Chrysanthemums.
HUGH N. KERSHAW, LTD., Keighley.—Tennis courts, greens, etc.
JOSEPH BENTLEY, LTD., Barrow-on-Humber, Hull.—Sundries.
PERRY'S HARDY PLANT FARM, Enfield, Middlesex.—Lilies, Gladiolus, etc.

Supplement to The GARDENERS' CHRONICLE.


J.W.
Gardchron

RHODODENDRON HIPPOPHAEOIDES.

THE
Gardeners' Chronicle

No. 1989—*SATURDAY, FEBRUARY 7*, 1925.

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SUPPLEMENTARY PLATE.
Rhododendron hippophaeoides.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 39·2.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, February 4, 10 a.m.: Bar. 30·5, temp. 50°. Weather, Fine.

Seed Potatos and Virus Diseases.

THE view expressed by Dr. Salamon and referred to recently in these pages (see vol. lxxvi. p. 347) that virus diseases of the Potato are transmitted from plant to plant by the agency of aphides and other insects is, if well founded, of great practical importance to raisers and growers of Potatos. On this view the superiority of Scotch seed would appear to reside not, as used to be thought, in a superior state of the plant due to its cultivation in conditions of climate and soil more congenial than those which obtain in the south, but simply in the greater freedom from attack by aphis and other insects, of plants grown in the Lothians and other parts of Scotland which produce good "seed." This freedom, if indeed it occurs, may be the result either of greater scarcity of aphis, etc., in Scotland or to a reluctance on the part of the insects there to attack the Potato. Aphides not infrequently infest most heavily plants which are thriving but poorly, and hence the possibility is not precluded that even though carrier insects, aphis and others, prove to be common in the Potato fields of the seed-growing districts of Scotland they may operate less vigorously in spreading virus disease among the Potato plants than they do in the warmer, drier south. In view of the importance of the subject, these and other possibilities will, no doubt, be explored forthwith by research workers. Before any large scheme of dealing with the raising of "seed" uncontaminated with virus disease and of keeping the seed sets uncontaminated is adumbrated, we ought to be absolutely sure of the facts. For our part, and on the evidence before us, although we are not prepared to dissent from the view that aphis and other insect carriers are responsible for the spread of virus diseases, we do not think the evidence at present could secure a conviction of these pests in a court of scientific law. If the case were tried in Scotland the verdict would, we think, be one of "not proven." It is, therefore, the first business of the scientific investigator, before propounding measures based on the hypothesis of insect carriage of virus disease, to demonstrate incontestably the justness of the conclusions. So far as we know, the possibility of underground insects and other pests carrying the disease from one plant to another has not been put out of court. For all we know at present they, also, may be accessories. It is a curious fact that Dr. Salamon found that periodical spraying of Potatos with nicotine made no difference to the amount of degeneration of Potatos grown in the apparently uncongenial climate and soil at Barley, Cambridgeshire. Yet it may scarcely be doubted but that spraying must have kept down the attack of aphis. In any case, the experiment would be well worth following up as, as it stands, the results would seem to point away from, rather than toward, aphis as the offender. Another direction in which further preliminary investigation is needed is that of the curious partial resistance to virus disease exhibited by Golden Wonder and one or two other varieties. Apparently virus disease is always present in these Potatos, but the damage which it does to the plants is much less than that done to most other varieties. Are aphides shy of Golden Wonder, or if not, does the virus disease often fail to get into the plant through punctures made by aphides, or does it get in but fail to spread through the tissues? Many years ago the present writer proposed that a Potato institute should be established for the investigation of all problems connected with Potato growing, and it is interesting to note that Dr. Salamon now makes a similar proposal. There is no doubt but that the problem of virus disease alone provides ample occasion for research, not only by individual workers, but also by a united band of investigators, and it is greatly to be hoped that steps will be taken in this country to organise research in these diseases on an adequate scale. Some years ago it looked as though Wart disease was going to prove the most serious menace to Potato growers. In the light of present indications the opinion might be hazarded that whereas Wart disease might perhaps scourge the Potato grower with whips, virus disease is scourging him with scorpions. We would, therefore, suggest that the Ministry of Agriculture should take steps to establish a Potato Research Committee, and put at the disposal of the committee adequate funds, so that after a considered programme had been drawn up, systematic investigations on a sufficiently large scale may be set on foot. When the facts concerning the disease have been established on a firm basis, we have no doubt but that the Potato industry will be able to apply them so as, if not to rid us of the troublesome pest, at least to mitigate the severity of attack by virus diseases.

Garden on a City Roof.—On the spacious roof of the newly completed Adelaide House, a vast block of city offices at the north end of London Bridge, a model putting-green is being laid out for the use of tenants, to be surfaced with Cumberland turf. The remainder of the roof will be planned as a pleasure garden, a pergola running east and west along the river frontage. This interesting roof garden will be eleven stories above the road-level.

"Index Kewensis."—The arrears (due to the war) in the great *Index Kewensis* are being rapidly overtaken. The last pre-war Supplement, covering the years 1906–10, was published in 1913; and it was not till nine years later that it was possible to issue Supplement V., covering the years 1911–15. But Supplement VI, covering the years 1916–20, is now complete, and printing has begun at the Oxford University Press. The publishers inform us that their stock shows that a large number of sets of the work have not yet been completed to date by the addition of Supplement V. (published in 1921); and they ask us to call the attention of librarians to this fact. The value of the work, both scientific and pecuniary, is, of course, seriously impaired by failure to complete the sets; and the relatively low price at which the Supplements are issued has been made possible by the support given by librarians and learned institutions all over the world.

Back to the Land.—Under the title of "Back to the Land," a valuable paper was contributed by Mr. C. Engelmann to a recent meeting of members of the Saffron Walden Rotary Club. Mr. Engelmann said he was convinced that any legislative or artificial measures would in the end prove useless in solving the "back to the land" problem. The real problem was how to make the land attractive to both employer and employee, and it was simply one of £ s. d. The employer would offer the wage to attract men back to the land so soon as he could get sufficient out of the land to enable him to do so; and the only way to do it was to make the soil give up more of its riches. This was being done in many parts of this and other countries. Certain districts had been made famous through their specialities, and it was not at all to be taken for granted that those districts were more suitable than any other for these respective crops. These specialities were mostly started by accident, not by design, and there were other districts where the crops would succeed equally well or even better. At the present time many special crops were being grown abroad and imported into this country which might be produced just as well here. The opportunities were at our door; wealth untold was in the soil waiting to be extracted, and it was the nation's business to produce the men able and willing to extract it. He could see one way only to achieve this—by education. No country school should be without its good-sized field, where the older boys could have a fairly large plot each to cultivate and substantial prizes should be given for the best crops, while agricultural and horticultural schools and colleges should arrange visits to those districts at home and abroad where special crops were produced.

Flora of Canada.—At a recent meeting of the Linnean Society, Mr. R. D'O. Good gave an account of the flora of Canada, with an exhibition of the plants gathered, and showed lantern-slides of the more striking flowers. He pointed out that Canada has an area some thirty times that of the British Isles and a flora about three times as large. The vegetation of Canada forms part of the great circumpolar Northern temperate and sub-arctic flora. As in Britain, the largest plant families are the Compositae, Gramineae, Cyperaceae, Leguminosae, Rosaceae, and Labiatae, and the first-named is very much larger than any of the others. There are also a good number of families which are absent from our own country, but only four of these—Asclepiadaceae, Hydrophyllaceae, Anacardiaceae, and Xyridaceae—are represented by more than one or two odd species with an unusually high Northern limit. In traversing the country from East to West four main vegetational types are encountered —*i.e.*, the Eastern forest, the prairie, the mountain, and the Pacific littoral. The first named includes a rich Southern element, chiefly developed in the region of the Great Lakes. The whole topography of Canada has been influenced enormously by glacial action. The Southern limit of the Pleistocene ice was much farther South, well down in the United States, and during its maximum development the whole country was presumably permanently within the ice-cap. The present flora of Canada is, therefore, an immigrant flora developed in the geologically short time since the retreat of the ice. The characteristic landscapes of parts of Canada are also due to glacial action. The vegetation of Eastern Canada has a familiar aspect, owing to the number of plants introduced from the Old World, many of which have established themselves widely and abundantly. This feature is less marked towards the West. Canada and Great Britain also have many native species in common, many of our rarest plants being very plentiful there. The feature of replacing of representative species is very well illustrated. These may be closely-related species of the same genus, distantly related species of the same genus, or species of quite distinct genera. Others are ecological representatives, possibly quite unrelated but filling a corresponding niche in the general vegetation. Other features of particular interest in the flora are the number of wild plants familiar in English gardens, the great development of the Compositae, the presence of certain large genera with many closely-related species, the number of Ericaceae but absence of Ericeaa, and the relationship of the flora of Eastern Canada with that of Eastern Asia.

New Victoria Medallists.—Mr. H. J. Jones, Lewisham; Mr. G. F. Moore, Chardwar, Bourton-on-the-Water; Professor W. Wright Smith, Director of the Edinburgh Botanic Garden; and Mr. George Yeld, of Gerrards Cross (formerly of York), have been awarded the Victoria Medal of Honour in Horticulture. These gentlemen fill the vacancies in the Roll of Victoria Medallists caused by the deaths of Dr. W. B. Hemsley, Mr. Sydney Morris, Mr. James Sweet and Sir Harry J. Veitch.

Agricultural Scholarships.—In conjunction with the Development Commission the Departments of Agriculture for England and Wales and Scotland have instituted a new class of Scholarships with the object of training those who desire eventually to take up posts as Agricultural Organisers under County Councils, or as Lecturers, whether at Agricultural Departments of Universities, Agricultural Colleges or Farm Institutes. The Scholarships are of two years' duration. The first year of the Scholarship will be spent on investigational work in this country and the second year will be spent abroad. The Scholarship allowance in the first year will normally be £200; the allowance in the second year will include provision for extra cost of travel and other expenses abroad. The Development Commissioners have approved of the following awards—the first under this new Scholarship scheme. To be awarded by the Ministry of Agriculture: H. D. Bennett, B.Sc. (Hort.), University College, Reading; F. H. Garner, B.A., Cambridge University; V. Liversage, B.Sc. (Agric.), N.D.A., Harper Adams Agricultural College; and T. Lewis, B.Sc. (Agric.), University College of North Wales. To be awarded by the Board of Agriculture for Scotland: A. D. Imper, B.Sc. (Agric.), Marischal College, Aberdeen.

Mr. T. E. Tomalin.—Mr. Tomalin occupies a somewhat unique and onerous position in the horticultural world, as he has charge of two large establishments, each in a different country. He commenced his gardening career under his father at Oakwood, Crayford, Kent, where Orchids and specimen stove plants were then grown most successfully. Passing on to Lord Chesham's garden at Latimer, Buckinghamshire, he presently took charge of the fruit houses, and became keenly interested in the cultivation of Chrysanthemums for exhibition. Under Mr. A. W. Metcalfe, now of Luton Hoo, Mr. Tomalin became first journeyman and decorator at the Marquis of Exeter's famous establishment at Burghley, "by Stamford town." Later he became foreman at Middleton Park, Earl Jersey's Oxfordshire seat, whence enormous quantities of flowers and fruits were sent to the Earl's Middlesex establishment, Osterley Park, for the series of garden parties which were at one time a great feature of the London season. At the age of twenty-seven years, Mr. Tomalin, on the recommendation of Earl Jersey, took charge of the Earl of Bessborough's gardens in Co. Kilkenny. Here he received every encouragement, as the late Countess of Bessborough was a most enthusiastic garden lover. At Bessborough, Mr. Tomalin extended and improved the cultivation of hardy fruits, and produced a large supply of vegetables while still maintaining the traditions of the gardens for the excellence of their ornamental features. Mr. Tomalin has won many prizes in London with Irish-grown fruits, and on many occasions he has contributed cultural notes to these pages. Not so very long ago the Earl of Bessborough acquired the Stansted Park estate, at Emsworth, in Sussex, and asked Mr. Tomalin to take charge of the gardens there. He accepted the added duties, and although residing at Stansted and carrying out many improvements, he continues to direct the management of the gardens and orchards at Bessborough.

MR. T. E. TOMALIN.

Sweet Pea Annual, 1925.—The annual publication of the National Sweet Pea Society, well-known as the *Sweet Pea Annual*, has reached its twenty-first year, but we think several previous issues have been more interesting. A considerable amount of space is occupied by the classes and the prize-winners at the exhibition held in London on July 10 and 11, 1924, and lists of members and affiliated societies. The audit of Sweet Peas exhibited at the July show, as compiled by Mr. G. H. Burt, shows that one-hundred-and-forty-three varieties were exhibited, and the most popular sorts, judged by the number of times they were represented in collections, were Constance Hinton (79), Royal Scot (57), Mrs. Tom Jones (55), Hebe (42), Matchless (44), Elegance (42), and Picture (40). The first thirty-one varieties in the list were exhibited ten or more times, while thirty-six varieties were shown once only, and thirty-seven varieties only twice. The report of the Floral Committee for the year 1924 occupies three pages and is followed by the classification of Sweet Peas and the list of too-much-alike varieties, which together occupy three pages. The Annual Report for the year 1924, together with the Statement of Accounts, are included in the issue, and the names and addresses are given of the officers and members of Committee, with two pages of vice-presidents. Mr. Aldwell contributes "First Impressions" of the great Sweet Pea Show, and of his visit to the Society's trials at Brentford. "Sweet Pea Notes from Dunedin, New Zealand" are interesting, and accompanied by an illustration showing Sweet Peas grown for seed in central Otago. These are contributed by Mr. G. Errington, who observes that the Dunedin Horticultural Society held a spring show in September, 1923; a summer show in December, 1923; an autumn show in March, 1924; and a winter show in May, 1924, at all of which Sweet Peas were exhibited. In other words, Sweet Peas were up to exhibition standard for a period of about eight months. The Secretary, Mr. A. C. Bartlett, shows how the Novelty Trials are managed and his observations make it obvious that it is quite impossible for any member of the Floral Committee to get any inside information until after the trials are judged. Mr. Norman Lambert's observations on Floral Committee matters, as read at the annual meeting of 1924, are published, together with Mr. G. H. Bury's remarks on "How a Novelty is Created," reprinted in part from *The Christian World*. There are numerous illustrations, including a portrait of the new President, Mr. Edward Sherwood, who was for many years Treasurer of the Society, and one of Mr. Tom Jones, who was awarded the Henry Eckford Memorial Medal last year.

Beauty Spot for the Nation.—Mr. Edward Cadbury and Mr. George Cadbury have generously presented to the nation over four hundred acres of the Chadwich Manor Estate. This fine gift adjoins the part of the Lickey Hills acquired by the City of Birmingham, and thus secures to the public, for all time, a very lovely area of rural Worcestershire. The area extends from Beacon Hill to Waseley Hill and includes woods, upland meadows, and arable land. It also includes the Manor House of Chadwich, a seventeenth century dwelling. The donors express the hope that the present rural nature of the countryside, may be preserved.

Haarlem International Show, 1925.—The Exhibition Committee of the Chamber of Horticulture has discussed the question of organising a British exhibit at the International Flower Show, Haarlem, 1925. The Committee most regretfully but unanimously agreed not to organise a British exhibit. This decision was arrived at by reason of the dates offered by the Dutch Show Committee being unsuitable to a British participation. The Committee will, however, be pleased to give any assistance in their power to private firms wishing to display independently at this International Show.

Appointments for the Ensuing Week.—Monday, February 9: Burnley Horticultural Society's lecture and meeting; United Horticultural Benefit and Provident Society's meeting. Tuesday, February 10: Royal Horticultural Society's Committees meet and Annual Meeting; Jersey Gardeners' Society's meeting; Newcastle and District Horticultural Mutual Improvement Society's lecture. Wednesday, February 11: Wimbledon and District Gardeners' Mutual Improvement Society's meeting; Sheffield Chrysanthemum Society's meeting; Bath Gardeners' Society's meeting. Royal Gardeners' Orphan Fund annual meeting and election at Simpson's Restaurant, Strand. Friday, February 13: Royal Horticultural Society of Ireland Council meeting; Orchid Club meets.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Chinese Method of Packing Seeds for Export.* On paying a visit to one of the principal nursery gardens at Fa-tee, near Canton, I was curious to see the process of preparing and packing those seeds which are usually sold to foreigners to be sent home to friends in Europe and America. I had been accustomed to believe, with all good charitable people, that these seeds were boiled or poisoned in some way by the Chinese before they were sold to our merchants, in order that the floral beauties of China should not find their way into other countries, and the trade in seeds be injured. The Chinese are certainly bad enough, but like other rogues they are sometimes made worse than they really are. "Come Aching," said I to the old man who generally supplied these seeds, and in whose good graces I stood pretty high, from having made him a present of a rare and curious plant, "I want to see your method of packing seeds for foreigners. Take me to your seed-room and show me the whole process from beginning to end." The old man led me up to the middle of his garden, where he had an ornamental shed or seed-room. It was nicely fitted up with shelves, on which were arranged a great number of small porcelain bottles, such as I had often seen in London with seeds from China. "Sit down," said he, "and I will explain the business to you. I first gather the seeds from the plants. I then put each kind, separately, into one of these small bottles, and then pack the whole into a little box ready for being shipped to Europe or America." "I understand that part of the business," said I, "but what is the substance which you put into the bottles along with the seeds?" This was a white, ashy-looking powder which we supposed in England might be burnt bones, and some conjectured that it was mixed with the seeds for the purpose of manure. "Burned lice," said Aching. "Burned what?" I asked, with a smile which I could not conceal. He repeated the assertion with all the gravity of a judge. The reader may probably be ignorant of the Chinese language, and I will therefore explain that a Chinese cannot pronounce our letter r; he has not such a sound in his language. In trying to pronounce any word in which the letter occurs he invariably substitutes the sound of l for that of r. It was, therefore, burned Rice, or the husks of Rice reduced to ashes, which he meant. I then asked him the reason why he used this substance in packing seeds, and he replied in Canton English as follows: "S'pose my no mixie this seed, worms makie chow-chow he." Although the Chinese in Canton would consider this excellent English, it may be as well to explain what his meaning actually was, which was this. "Suppose I did not mix ashes with the seeds, worms would eat them." He alluded to a little maggot which would come out during the voyage. "Don't be angry," said I, "but we English fancy you do something to destroy the vitality of the seeds, instead of endeavouring to preserve it." "I know," said the old man, "you fancy I boil them." *Robt. Fortune, Gard. Chron., February 9, 1850.*

Publications Received.—*Flowering Trees and Shrubs.* By A. J. Macself. Thornton Butterworth, Ltd., 15, Bedford Street, W.C.2. Price 6/- net. *Arbres et Arbustes d'Ornement de Pleine Terre.* By S. Mottet. Librairie J. B. Bailliere et Fils, 19 Rue Hautefeuille, Paris. Price 50 frs.

IRIS GARDEN.

IRIS WEDGEWOOD.

This new variety, which received an Award of Merit at the Royal Horticultural Society's meeting on January 27, eclipses anything we have previously seen in the way of early-flowering bulbous Irises. It is, we gather, a cross between I. tingitana and possibly I. Xiphium, and, unlike the first-named parent which it surpasses both in form and colour, it has the distinction of being of easy culture, and a 7-cm. to 9-cm. bulb can be relied upon to flower. This cannot be said of I. tingitana, which, although very beautiful, is in some years very shy to bloom, and the size of bulb is no criterion as to whether a flower will be produced, and accordingly many market growers have ceased to take it up on account of this uncertainty. Moreover, I. tingitana, when it does bloom, often produces speckled flowers which detracts greatly from their appearance, a trouble which appears to be constitutional and impossible to remedy by methods of culture. It has been the writer's privilege to see Iris Wedgewood growing at Uxbridge, where goodly quantities of bulbs have been under test for some time. Suffice it to say it is producing a hundred per cent crop, and is not only of easy culture, but a plant of simple requirements. The flower is of fine proportions; it is large in size and the petals are broad and well expanded. The colour, as its name would suggest, is of an entrancing shade of blue, and the blade of the fall has a canary-yellow blotch. The variety is to be distributed to the trade this year by Messrs. Lowe, Shawyer and Van Waveren, and we can but think that it is a flower which will have a fine reception, as in its earliness it fills a much-needed gap in the time of the year when Tulips and Daffodils are practically the only forced flowers on the market. *J. K. R.*

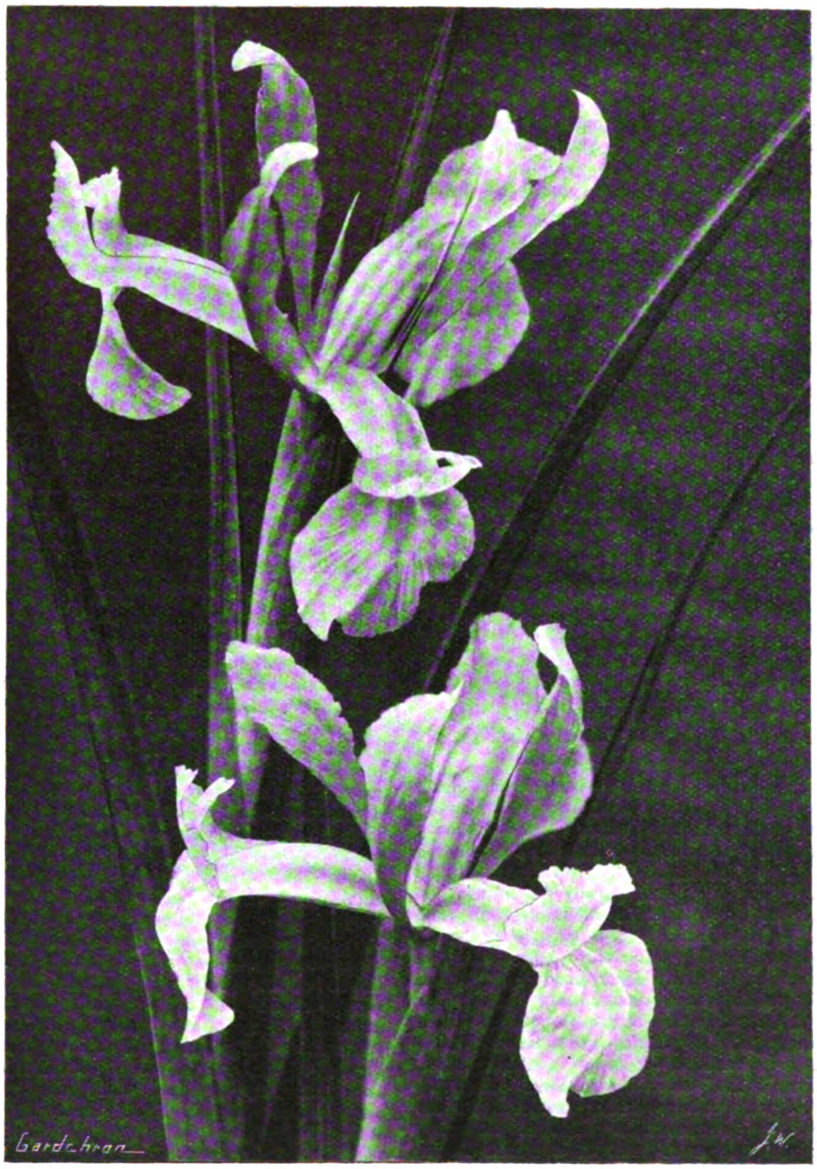

FIG. 33.—IRIS WEDGEWOOD.
R.H.S. Award of Merit, January 27.

IRIS UNGUICULARIS.

What a possibility this beautiful winter-blooming Iris seems to offer to hybridists to raise a series of Irises that will enliven the garden with bright flowers in the dead of winter, when gardens are so bare of bright colour.

Quite recently (February 1) I saw a patch of this pale blue flowered species with numbers of its charming blossoms open, and I was informed that the plants were in flower long before Christmas. *T.*

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Coelogyne Mooreana.—The chaste Coelogyne Mooreana is in bloom, and its upright spikes of white and yellow flowers are very lovely. This Orchid certainly deserves a place in every collection, however select it may be. The plant is very easy to cultivate, and grows well in pans suspended near to the roof-glass in the Odontoglossum house. When grown in cool conditions it is not so liable to attacks of red spider as in a warmer atmosphere. The most suitable time for re-potting this Orchid is soon after the flowers have faded. Afford the roots plenty of water during the growing season, and at other times keep the compost fairly moist.

Cattleya.—Plants of C. Warneri are in active growth and should be placed in the lightest and warmest position available in the Cattleya house. The roots should be afforded sufficient water to keep the compost moist until the flowers are open. The work of re-potting should be done immediately after the blooms are removed. The buds are appearing in the flower sheaths of Cattleya Trianae, C. Percivaliana, and many hybrids from these plants, which should be grown in a light position in the house from now onwards until after the flowering period is over. Increase the supply of water at the roots in order to assist the plants to develop their flowers fully, reducing the amount after the flowers are cut, and keeping the soil on the dry side until active growth is again in evidence.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Tuberous-rooted Begonias.—Bulbs of these valuable bedding plants will now be showing signs of renewed life after their winter rest, and they should be placed in moderate warmth in boxes containing a light, leafy compost. This compost should be moist so that little or no water is necessary in the early stages of growth, as there is a danger of water collecting in the saucer-shaped top of the bulb and destroying it. Where these Begonias are extensively used for bedding it is advisable to raise plants from seeds every year to make good losses which occur from various causes. The seeds should be sown at the present time in pans of light, sandy soil, scattering them thinly on an even surface without covering them. Place the seed-pans in a warm house and cover them with sheets of glass until the seeds have germinated. So soon as the seedlings can be handled prick them off into boxes or pans filled with a similar compost and grow them on in a warm house until they are large enough to be transferred to hot-beds in frames. Although plants raised in this way may not be ready for including in the general bedding-out scheme, they are extremely useful for filling spaces later in the season, where failures may have occurred either in beds or in groups in the mixed border.

Border Chrysanthemums.—These highly decorative plants occupy an important position in gardens, and they are invaluable for keeping beds and borders gay after many other occupants are long past their best. Plants that have been kept for stock will now be producing shoots freely, suitable for making cuttings. They should be placed in a light, airy position, to promote sturdy growth. So soon as the shoots are from two to three inches long they should be inserted in boxes of light, sandy compost. It is important that the soil be pressed firmly round the base of the cutting, and it is wise to water the cuttings in with a fine-rosed can. It is not necessary to place them in an air-tight frame as they root quite freely if the boxes are stood on the stage of the greenhouse and shaded from excessive sunshine. The choice of varieties is largely a matter of individual taste, but the following sorts are well worth growing:—White: September White, Framfield White and Sanctity. Yellow: Horace Martin, Hollicot Yellow and Golden Almirante. Pink: Normandie, Madame Marie Massé and Lichfield Pink. Bronze: September Glory, Phoenix and Goacher's Bronze. Chestnut: Almirante, Ethel Blades and Mr. J. Fielding. Crimson: Red Almirante, Goacher's Crimson and Mrs. W. Sydenham. The single varieties are not quite so suitable for mass display, hence they are not so much in demand, but there are many beautiful varieties that are particularly suitable for supplying cut flowers, amongst which may be mentioned: Fleur de Péche, pink; Goldfinch and Nathalie, terra-cotta; Fairy, white, suffused pink; Ruby, Chieftain, Gloriosa and Red Cross, red shades.

Dahlias.—The tubers of those varieties of Dahlias of which increased stock is needed should be brought into a house of moderate warmth. They should be placed in a light position as near the roof-glass as practicable, so that short-jointed, sturdy cuttings may be provided.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Advice to the Amateur.—I have been asked to include this week a few notes for the amateur and gardener with a limited amount of glass, who would like to grow a small quantity of fruits under glass. Those with only one house can grow Grapes, selecting the Black Hamburgh variety which is one of the easiest to manage, and the berries may be perfectly finished with very little artificial heat. Brown Turkey Figs may be grown against the back wall, the treatment of the vines receiving first consideration. A shelf near the roof-glass would accommodate an early batch of Strawberries, Royal Sovereign being a reliable variety. The vine border is best inside the house. Take out all the soil in the house to a depth of two feet six inches, then cement the bottom of the trench excavated to prevent the roots from getting out of control. Half bricks stood edgeways to a depth of six inches, and four feet wide for the first two seasons, will provide drainage, and these should be covered with flat slates, tiles or slabs to prevent the soil from entering the drainage. Procure a supply of fibrous loam (not too heavy), place the turves grass side downwards, and build a turf wall to hold the border. This should be done very neatly as the making of the border proceeds. Keep the joints apart similar to brick work. Use whole turves, and do not chop them into small pieces as is often recommended for the making of vine borders. Between each layer sprinkle soot and clean wood ash, making certain there are no pieces of unburned wood in the latter, and incorporate sufficient mortar rubble and broken bricks to render the compost open and porous. A sprinkling of quarter-inch bones worked through the whole will prove beneficial. Continue this until the new border is two feet six inches from the bottom. Make the soil firm by ramming and finish off with fine soil left over, and allow the border to become warmed and settled before planting the the vines. The roots of the Figs on the back wall should be confined to a very small border, otherwise the trees will grow too freely at the expense of fruiting. Drain the site as for the vines, and only provide a two-foot border. Build up a dry wall of bricks to keep the soil in position and use plenty of mortar rubble and broken bricks in the compost, which should be rammed thoroughly; the empty space between the two borders should be left open for future additions. The best plan is to cover it with trellis staging; it may then be used for various purposes. The vines, Fig Trees, and Strawberries may be obtained from a reliable nurseryman.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Ferns.—The potting, top-dressing, and general overhauling of the Fernery should be undertaken at this season. As Ferns require copious supplies of water during the greater part of the year, those which are grown in pots should be afforded ample and efficient drainage. A compost comprising one half of good fibrous light loam, leaf-mould and peat, with the addition of sand, charcoal, and finely broken crocks, may be used. Large specimens are now little in demand. Present-day requirements rather call for batches of plants grown in small or medium-sized pots. The Nephrolepis are amongst the most useful of Ferns for indoor cultivation, of which N. todaeoides, N. Marshallii and N. Whitmanii are desirable varieties. They are readily increased by division, grow rapidly in a moist, warm atmosphere, are amenable to cool treatment after making their growth, and when grown in four-inch and five-inch pots are admirable subjects for grouping amongst flowering plants in the conservatory or in the mansion. The plumose Nephrolepis are also excellent plants for growing in hanging baskets.

Adiantum cuneatum.—Although the Maidenhead Fern may not be so popular as formerly, it is better suited than the Nephrolepis as a foil to certain flowering plants, such as Gloxinias. Though Adiantums thrive best when provided with a fair amount of root room, plants which are grown in small pots are the more generally useful. When dividing old stock plants, select pieces from the outside for potting into small receptacles. At the annual attention to the plants it is well to place a quantity in quite small pots. These will take up but little room and in the following year they may be transferred intact, to slightly larger receptacles and will make much better specimens than will those which have been started by the division of old stock.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Morello Cherries.—In most gardens Morello Cherries are trained on north walls, and in many places their pruning is deferred until the other trained trees are attended to owing to the position they occupy, and the trees being later in developing their fruit buds than the others. All fruitless wood, outstanding shoots and unnecessary branches should be cut away before the branches are detached from the wall; then the trees should be liberated from the wires, or the wall, if nailed, and the wall well sprayed with an insecticide as advised in last week's calendar for Peaches. The trees will then be in readiness for tying or nailing to the wall again; if tied to wires tarred tillis of medium size is large enough for the main branches, whilst for the fruiting shoots, raffia answers quite well; the latter lasts the year through and that is all that is required. The shoots should be tied and trained on the same system as is practised for Peach trees. If the Cherries are advanced in age give the roots a moderate top-dressing of bone-meal, forking it in the border three or four inches deep. If the surface roots are near the surface and forking the border is likely to damage them, cover the bone-meal with loam or any other soil that is available.

Apricots.—The pruning of Apricots should be completed without delay, and the trees trained in position. The shoots of the Apricot have a tendency to die, and sometimes one-third of the tree will succumb, therefore it is wise to retain plenty of young shoots anually, but they should not be overcrowded. The flower buds are generally the first of the fruit blossoms to expand and need protection; the method advised for Peaches may be adopted. The borders should be forked, made neat and tidy, and lightly dressed with lime, which will be more beneficial than manure, especially on heavy land.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Mushrooms.—Have all available horse droppings collected daily and spread in a shed, keeping them well turned until sufficient have been secured to make a bed, then throw the droppings in a heap and turn them three or four times in the course of a week. When the heat of fermentation is on the decline make the droppings into a bed in the Mushroom house, being sure at all times to make the bed thoroughly firm all over with a mallet. Plunge a thermometer in the bed, and when the temperature is about 75°, after a few days it should be spawned. Break the cakes of spawn into pieces about the size of a pigeon's egg, and plunge the pieces in the bed to a depth of two inches to three inches and about four inches to six inches apart. After a few days, sift some good loam, placing this on the bed to a depth of two inches and make the surface firm and level with the mallet. Maintain a fairly damp atmosphere in the house and, when moisture is necessary, water the bed with tepid water. On no account allow the temperature to rise above 60°, as Mushrooms do not succeed in excessive warmth. When the buttons begin to appear, keep a sharp watch for slugs and woodlice, which do great damage to the crop.

Spring Cabbage.—When the ground is in a fit condition examine the plots of spring Cabbages. Go down the rows and make good any failures that may have occurred through various reasons. Make firm again existing plants that may have been loosened in the recent gales. If there is any doubt of a shortage in this crop, sow seed of an early-hearting variety in boxes and let the plants develop steadily in a greenhouse. By pricking them off into boxes and frames and planting them out so soon as they are large enough, these plants will be found useful as a successional batch to the autumn-planted bed.

FOR NORTHERN GARDENERS.

By JAMES JEFFREY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Tree Carnations.—Plants that are well established in their flowering pots may now, at intervals of a fortnight, be fed with a suitable Carnation manure. Admit air to the house during cold weather with caution, and keep a close watch for mildew and green fly. Plants that were rooted from cuttings late in the autumn and now in thumb pots may, if ready, be transferred to 3½-inch pots. The main shoots should be pinched and the plants allowed to grow freely.

Perennial Lobelias.—Clumps of these Lobelias that have been lifted and wintered in cold frames may be increased for bedding purposes by division whenever their growth is sufficiently advanced. The divided crowns may be either potted or placed in boxes. Lobelia cardinalis Queen Victoria and Lobelia cardinalis Firefly are two useful varieties.

Bulbs.—Those that are being grown in cold frames, in pots or boxes for early flowering indoors, may be introduced to a warm house as required. At all times see that they do not lack water.

Gloxinias and Caladiums.—The corms of these plants may now be shaken out of the pots and placed on a thin layer of leaf-mould in boxes. They may be potted when growth appears.

Kitchen Garden.—Where early Turnips and Carrots are required a hot-bed may now be prepared in a suitable frame. Fresh horse manure and leaves are the best fermenting materials, and when sufficient is obtained they may be made in a bed three feet in depth and pressed firmly. Cover the hot-bed to a depth of not less than six inches with soil. The best Turnip for growing in frames in this way is Early Milan, and of Carrots Early Horn is the best. A few roots of Mint may be lifted from the open ground and brought into growth under glass in boxes.

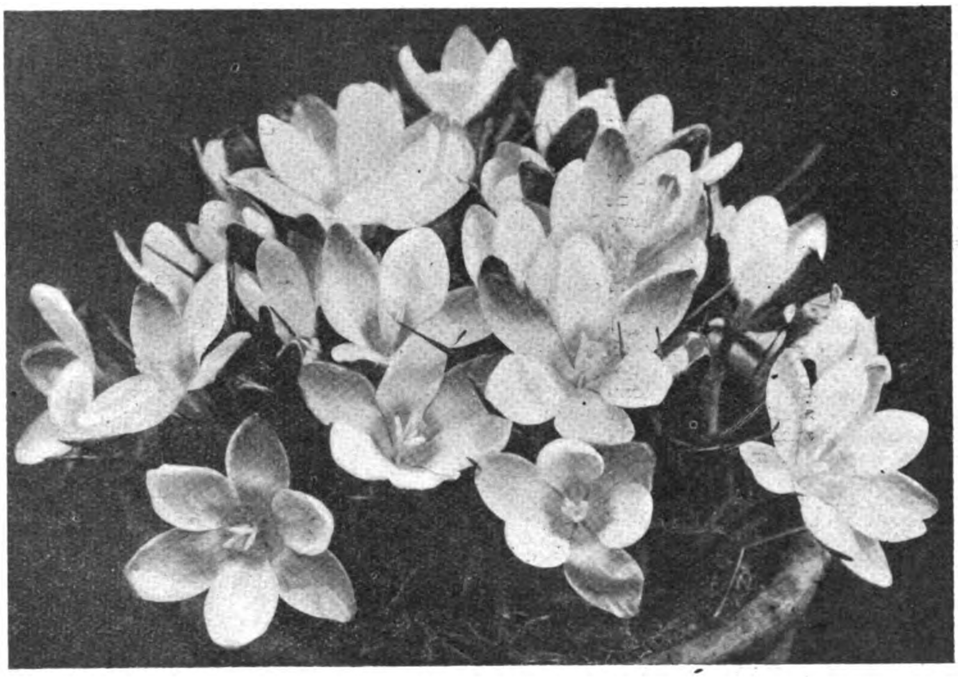

FIG 34.—CROCUS CHRYSANTHUS VAR. BUMBLE BEE.
R.H.S. Award of Merit, January 27 (see p. 82.)

Broad Beans.—Preparation should be made for sowing Broad Beans on a sheltered south border. Two or three short rows will suffice. Fork the ground intended for them roughly, so that it may get dry, and sow on the first favourable occasion. If a few continuous cloches are available these may be placed over the rows to ensure the better germination of the seeds.

Tomatos.—Tomato seeds may now be sown to raise plants for cropping in early summer. Sow also a few Cucumber seeds, inserting them singly in small pots and germinating them in bottom heat.

INDOOR PLANTS.

LACHENALIA.

THESE Cape bulbous plants, the generic name of which is in commemoration of W. De Lachenal, a noted professor of Basel University, 1736-1800, are very easily grown, and for reasons unknown, not nearly so popular as they might be. The genus consists of some thirty species, of which only a very few are known outside botanic gardens; during recent years numbers of very beautiful hybrids have been raised and they should appeal to the most fastidious of tastes. Lachenalias are best grown in pots or pans, and they may also be utilised for the adornment of hanging baskets in the cool greenhouse or conservatory.

From six to eight bulbs may be placed in a 48-sized pot, using as a rooting medium rich, sandy loam mixed with a small proportion of good leaf-mould; the bulbs may be embedded in sand, and thorough drainage is essential.

The plants should be potted during July or August, and until the advent of frost should be grown in a cold frame, plunging material being quite unnecessary and indeed not advisable; the great secret is to allow growth to develop slowly in cool conditions.

In winter the plants should be grown on a shelf in a cool house, and as near to the roof-glass as possible; when the flower spikes appear watering with liquid manure on frequent occasions will prove beneficial to them, as will also applications of clear soot water.

To see these Cape Cowslips at their very best they should be massed, when in flower, on the conservatory or greenhouse stages, where, under cool conditions, their lasting qualities are remarkable.

As with most Cape bulbs, a thorough ripening or period of rest is necessary to their well-being, and for summer quarters no place is better than a greenhouse shelf in full sunlight; at the resting period withhold water gradually and then submit the pots to a thorough "baking."

A few large pans of these bulbs are most effective. Some of the most beautiful are

L. Nelsonii, a hybrid "sent out" in 1881, with golden-yellow flowers and spotted leaves and flower stems; L. orchioides, 1752, with flowers pale cream, tinged red and blue, a somewhat rare plant; L. pendula, 1789, one of the best, the flowers being purple, red, and yellow in colour, and L. tricolor, 1774, with flowers green, red, and yellow, an old favourite. Others occasionally met with are L. odoratissima and L. fragrans. If I were restricted to one of the older Lachenalias I should most certainly grow L. Nelsonii, which has flowers of glorious colouring, and especially is this realised when they are seen in the mass.

A few firms offer a comprehensive list of these interesting bulbs but the newer hybrids are dear to purchase. Most of the older species and the hybrid L. Nelsonii increase fairly readily by means of offsets. *Ralph E. Arnold.*

SAINTPAULIA IONANTHA.

This charming plant is regaining the popularity it fully deserves. I was not surprised to read in *The Gardeners' Chronicle*, Vol. LXXVII., page 9, that some excellent specimens of Saintpaulia ionantha were being sold in Covent Garden at good prices. Although a perennial it is easily grown and flowered within six months, and will continue in bloom for a long time. Plants raised from a good strain of seed will produce large flowers of an intense violet colour with golden anthers.

This Saintpaulia may also be propagated by means of leaf cuttings. A warm greenhouse or stove temperature is necessary for growing on the young plants. As they become established in their flowering pots they may be removed to a lower temperature as required. Careful watering and the removal of dead flowers and foliage are essential details of cultivation during the winter. Guard against placing the plants in a draughty position.

This plant will grow in practically any soil that is sweet and well drained; one sometimes sees specimens growing in the shingle on the stages. A suitable compost for the seed pans consists of finely-sifted peat, loam, and sand in equal proportions. Place the seed pans in a propagating case and cover them with paper until the seedlings appear. When ready to handle pot the seedlings in thimbles and keep the frame close for a time. Future treatment consists in repotting as required, careful watering, and maintaining a damp atmosphere. There is a strain with small flowers amongst rosettes of dark green leaves, and such plants are very ornamental when grown and flowered in three-inch pots.

Propagation by leaves may be effected by taking a mature leaf with a portion of the stalk attached and inserting it in sandy soil, either in small pots or in pans. Place the leaves in a warm case, provide shade, but do not keep the atmosphere too close or the leaves will be liable to damp.

CORDYLINE INDIVISA.

This is one of the most useful indoor foliage plants, and is most effective and serviceable for many purposes of decoration in the dwelling-room, whilst large specimens are useful for a variety of purposes in the garden during the summer; also for standing on terraces, for furnishing vases, and many other positions where specimen foliage plants are required.

Plants may be raised from seeds sown in gentle warmth early in spring. The seeds should be sown in well-drained pots or pans filled with a mixture of fine peat, loam, and sand. As the young plants become fit to handle pot them singly. They grow freely, and will be ready for re-potting during the summer.

Clean foliage is secured by the free use of the syringe during hot weather, and some slight shade is an advantage until the plants become well established. For the large plants a mixture of loam, coarse sand, and well-decayed manure is suitable. From a packet of seeds one may secure plants with considerable variation in the colour of their foliage, and this adds considerably to the interest attached to their cultivation.

The strong growers are generally those having dark green foliage, and these may be grown on for use out-of-doors, reserving those showing a tendency to variegation for indoor cultivation. *Colin Ruse, The Hyde Gardens, near Luton.*

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

PRIMULA MALACOIDES AND P. FORBESII.

Primula malacoides is of Chinese origin and of comparatively recent introduction. It was collected by Mr. G. Forrest in 1905 and 1906, and from the seeds sent home to Mr. Bulley, of Ness, the first plants were raised and flowered during 1908. It soon attracted attention and, under cultivation, proved to be a very variable species, a white variety, and also double forms soon appearing. Being of dainty and graceful habit, as well as of delicate perfume, it has become a great favourite for greenhouse and for general decoration.

With good cultivation perfect examples may be produced in large sixty-sized pots, but extra large specimens are best grown in five-inch receptacles; they are also very effective when several plants are grown together in shallow pans. As this species is nearly hardy, it should be grown under perfectly cool conditions. Seeds should not be sown before June and July. In the immediate neighbourhood of London early sowing generally results in failure, as the plants "damp-off" during the dull, sunless days of winter"; this trouble generally arises owing to the denseness of the foliage. In a purer atmosphere, where better winter conditions prevail, this disadvantage attending early sowing may not occur.

P. Forbesii is another Chinese species, with rosy-mauve flowers, and is very suitable for growing in a small greenhouse, as it is a small plant with slender flower scapes which, in well-grown specimens, only attain a height of nine to twelve inches.

Seeds are best sown in a cool house or cold frame about the middle of September, for spring flowering, although a sowing may be made during March or April for a display in the autumn. The young plants should be finally placed about four inches apart in shallow pans in which they should be flowered, or, if more desirable, three or four specimens may be placed in a forty-eight-sized pot.

Beyond the usual cool treatment and care in watering, the cultivation of this dainty little species is very simple. *J. Coutts.*

HARDY FLOWER BORDER.

THE SHAGGY HAWKWEED.

Hieracium villosum, the Shaggy Hawkweed stands far and away above all the other garden Hawkweeds, which are, as a rule, of very indifferent garden value—if many of them have any at all. So far as I know its nearest rival is one known as Hieracium Bornmulleri, but it has greater value on account of the more pronounced silvery shagginess of the stems and leaves, which is exceedingly beautiful and constitutes a charm of high value in itself. The leaves are large, quite shaggy and silvery in appearance—so attractive indeed that no flowers are required to give this Hawkweed a passport for entry to our gardens.

The large, golden-yellow flowers are like those of a Dandelion, but far more refined. The plant usually grows from six inches to nine inches high, but I have seen H. villosum almost a foot in height in strong soil. To have this Hawkweed in perfection, it should be grown in poor, dryish soil to keep it dwarf to induce the plant to bring out the beauty of its foliage.

It is now many years since I first made the acquaintance of H. villosum, when I was introduced to it by the name it bore in nurseries—H. valdepilosum, but I think this name has now fallen into desuetude. It may be raised very readily from seeds sown under glass in spring, or in the open in early summer. Old plants may also be divided. It is nowhere finer than in the garden of Sir Herbert Maxwell, at Monreith, Wigtonshire. *S. A.*

ALSTRÖMERIA.

The old Peruvian Lily is somewhat impatient of removal and this fact may have something to do with its disappearance from gardens, where at one time it was a conspicuous feature.

The varieties of A. versicolor and A. aurantiaca are the hardiest and the most reliable, A. aurantiaca in particular, when established in a mass, creating a gorgeous effect. Each slender, glaucous-foliaged stem of this plant is in its flowering season crowned with loose-petalled, orange-coloured flowers, the two upper segments lined with crimson stripes.

The Alströmerias form a mass of fleshy roots and thrive best in a deep, dry, sheltered border. They flower freely in sun or shade. *F.*

FLORISTS' FLOWERS.

SWEET PEAS FOR CUT FLOWERS.

In some gardens the Sweet Pea will grow luxuriously without much labour expended on the soil in which it is intended to plant, but in the majority of cases special preparation is necessary. Light land which has been trenched during the autumn, and which is rich in humus, will not require much further attention until the time of planting.

In the case of heavy land, and in new gardens, trenches should be prepared as soon as possible. Make the trenches thirty inches wide and three feet deep, and break up the soil at the bottom with a fork. Leave the trenches open during the winter, the effect of frost being most beneficial to the exposed soil.

For filling the trenches a sufficient quantity of decayed leaf-mould and old potting-soil in about equal proportions should be wheeled on to the site and placed in rows on both sides of the trench. My experience is that farmyard manure is not suitable for Sweet Peas, and I rely on bone-meal and a specially prepared concentrated manure. A liberal sprinkling of soot is added to the leaf-mould and the latter is turned two or three times during the winter. Choose frosty weather for this work as it can then be accomplished in a clean manner.

At the last turning add good quality bone-meal at the rate of a six-inch pot-full to a barrow-load of the soil. Fill the trenches to within about four inches, during March, making the soil quite firm.

If it is intended to train the plants on wires the supports may be placed in position at this time; if the supports are painted green, the wire fixed firmly and made quite tight, a neat effect is produced, but this method of training entails more labour than the use of Bamboo canes.

The seedlings should be ready for planting early in April, and it is advisable to plant before the roots become too matted in the boxes or pots from which they are to be removed. Trenches prepared as advised above will accommodate two rows of plants. Set them six inches from the sides of the trench and twelve inches apart in the rows. Arrange some protection, such as tiffany, canvas, Yew or Spruce branches, on each side of the trench to afford protection until new roots are formed and the plants commence to grow.

In many localities sparrows are troublesome to Sweet Peas, in which case the plants should be protected either by netting or by strands of black thread. Routine work consists in tying the growing plants to their supports and the removal of all laterals and tendrils.

The soil along the rows is apt to become very hard through continual treading in gathering the blooms, and the surface should be broken up from time to time. If water is required use, if available, rain water, and apply it in sufficient quantity to reach the roots. I prefer to apply the water along the outside of the rows after the soil has been broken up with the fork.

Heavy mulchings with farmyard manure are not to be recommended. A light mulch of old manure may be beneficial during a period of very hot weather, but green manure applied for this purpose will often cause bud-dropping, and many growers have found that the insidious "streak" disease is most prevalent on plants growing on land which has been enriched with heavy dressings of farmyard manure.

CARNATIONS.

THE weather during the present winter has not been suited to indoor Carnations. Dense fogs have been frequent and many blooms have been ruined in consequence.

In country districts the damage has been considerable, and growers near large towns must have experienced heavy loss.

It is advisable to cut the blooms before they are fully open.

Carnations will grow well in some gardens, yet in other gardens they cannot be cultivated with success. By this, I mean, individual varieties of Carnations.

In a Berkshire garden, one of our best pink varieties was R. F. Felton; it gave an abundance of very large flowers on long, stiff stems. The plant has a neat habit of growth, and when grown in a light position the flowers are seldom disfigured by the splitting of the calyx. In our garden this variety is conspicuous by its unhealthy appearance, and will be discarded. Where space permits, and flowers of R. F. Felton are appreciated, one is fully justified in growing on the plants for several years. Plants in eight-inch pots will produce grand flowers on very long, stiff stems.

The variety Edward Allwood is of bushy habit with us. The plants were stopped about the middle of July.

So far, I have not been successful with these Carnations in the open garden. The flowers are always damaged by damp before they fully expand.

At the time of writing, January 14, the variety Marian Wilson, is producing some excellent flowers on rigid, stiff stems. The plants were stopped early in July. *Colin Ruse, The Hyde Gardens, near Luton.*

ALPINE GARDEN

ASTILBE SIMPLICIFOLIA.

THE little Japanese Astilbe simplicifolia has, in a short space of time, earned a well-deserved popularity among all growers of rock plants who have become acquainted with it. It appears fairly frequently in exhibits of rock gardens at shows. It has, unfortunately, not the best reputation for longevity, caused by its sometimes flowering with such prodigality that the plant succumbs from exhaustion. It seeds freely and may be raised with ease in this way, although some find that seedlings do not come absolutely true to the type, and that a certain amount of interbreeding takes place with other species. This has already led to the enrichment of our gardens by the production of a set of valuable hybrids to which I shall refer.

The typical plant itself is very charming, with its tufts of undivided, toothed leaves and its sprays of small, white flowers on stems not more than eight or nine inches high. Mr. Farrer has referred to its interbreeding; and the result of this has been the production of some lovely little plants which pass under the name of A. simplicifolia hybrida. These are, it is true, less elegant than A. simplicifolia itself, but they are charming all the same, and while exceedingly floriferous, do not seem to be liable to bloom themselves to death. So far as I am aware only three varieties are as yet in commerce. They are named A. s. hybrida alba, carnea, and rosea, white, flesh-colour, and rose respectively. The last is the brightest but is not offensively brilliant and all three may be planted with confidence. The plants produce fine, arching sprays about a foot high.

The role of A. simplicifolia and its hybrids would appear to be for planting in a cool and moist part of the rock-garden, and in light soil, but the hybrids appear to be easier to cultivate than the original A. simplicifolia, and thrive well in a border exposed to the sun. All these Astilbes are charming, indeed, in the rock-garden, and the hybrids are also most pleasing in a choice border of the best hardy flowers. The latter soon form good plants and lend themselves well to propagation by division. *S. Arnott.*

PLANTS NEW OR NOTEWORTHY.

ACANTHOSABAL: NOV. GEN.

THE photograph of the beautiful Palm reproduced in Fig. 35 was sent by M. Francisco d'Aquino, Porto Alegre, South Brazil (Province of Rio Grande do Sul), to the Editor of this journal for identification, and as it appeared to represent a distinct Palm, it was sent to me for my opinion. I was impressed by the great resemblance it had to Chamaerops humilis, the only native European Palm, when seen at its best. As Palms belonging to quite different families sometimes closely resemble each other at first sight, and having only the photograph to examine, I reserved my opinion and asked for material, notably fruits or seeds. I communicated with M. d'Aquino, who kindly sent me fruits, from which I immediately saw that the Palm was not Chamerops humilis. At first sight I concluded that the fruits were of a species of Sabal. I sent a few of the fruits to Prof. D. Bois, the eminent botanist, of the Museum d'Histoire Naturelle, Paris, and director of the Botanic Garden of Paris. He replied: "Les graines dont vous m'avez envoyé un échantillon sont certainement celles d'un Sabal. Je les ai comparées avec celles des diverses espèces de ce genre que nous possédons dans notre collection (nous ne possédons qu'une partie de celles décrites) et ai pu constater leur grande ressemblance avec les graines de Sabal Ghiesbrechtii, Hort. et Sabal princeps, Hort. Verschaffelt, dont j'ignore la patrie (elle n'est pas indiquée dans les livres, notamment dans *l'Index Kewensis*). Que valent ces espèces? Peut-être s'agit-il aussi de l'une de celles, que nous manquent. Je regrette de me pouvoir vous renseigner mieux, mais en l'absence de descriptions précises la chose est impossible."

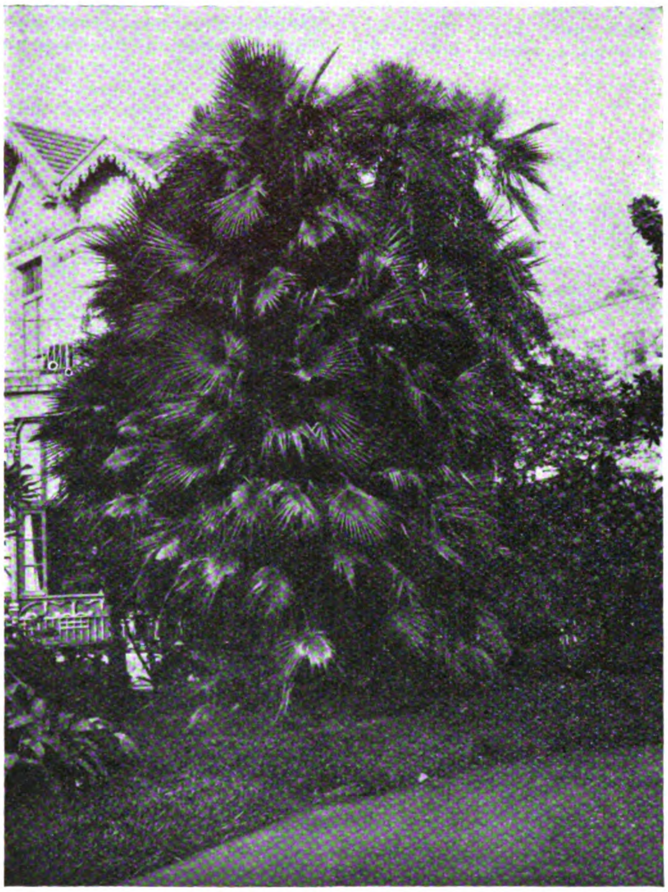

FIG. 35.—ACANTHOSABAL CAESPITOSA AT PORTO ALEGRE, SOUTH BRAZIL.

I wrote again, and M. d'Aquino was kind enough to send me some more material of this Palm, which aroused my curiosity, it being quite evident from the photograph that it is a caespititious species, while no Sabal has yet been described as having this character. I received two leaf blades and parts of the leaf-stalks, but as it was necessary to bend and break these materials to send them by post, all were more or less spoiled in transit, so that it was impossible to give a reliable description. Another character struck me immediately, namely, that the petioles are armed with spines (Fig. 37), a character unknown in any species of Sabal described. I have also received parts of the spadix (Fig. 36), which is very branched and surrounded by tubulous spikes of different degrees, the lower ones surrounding those situated higher on the spadix, as in the case of Sabal.

It would appear that the two characters—caespititiousness and armed petioles—distinguish this Palm sufficiently from the genus Sabal to be considered a special genus, for which I propose the name Acanthosabal, and the specific name caespitosa.

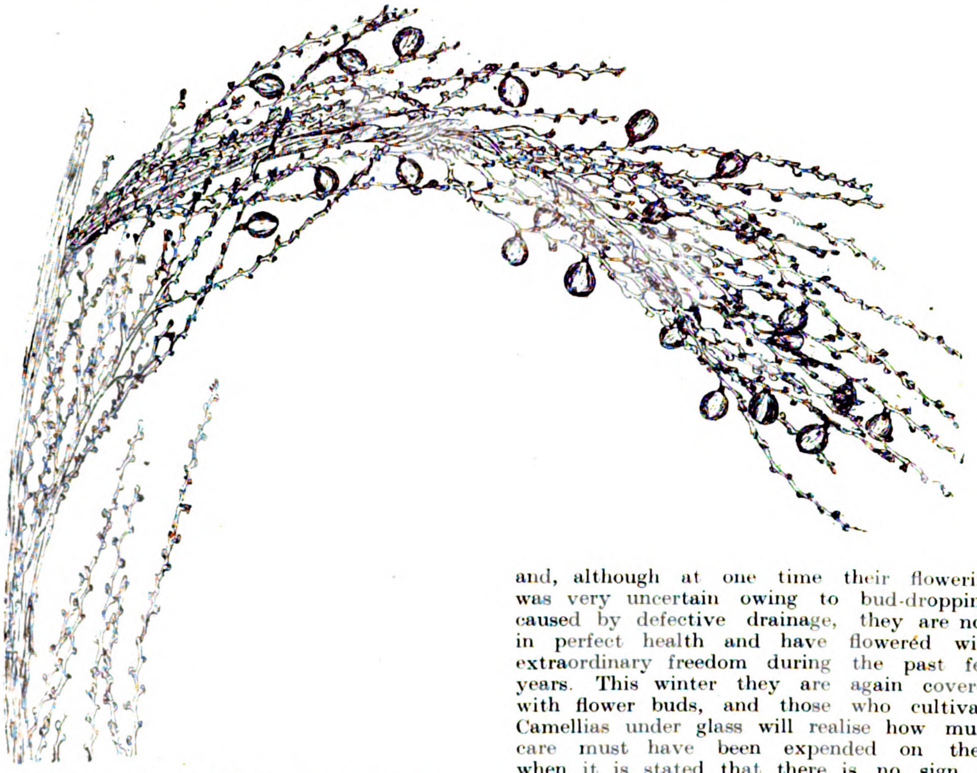

FIG. 36.—ACANTHOSABAL CAESPITOSA. Portion of spadix, with fruits.

M. d'Aquino writes me that about thirty-five stems issue from the same base, these stems having a diameter of about seven centimeters and that many smaller ones are continually developed from the base, so that it is an exceedingly caespititious Palm, while all the Sabals that have been described have only a single stem.

So far as I can judge from the broken material received, the leaves, which resemble strikingly those of Chamaerops humilis, have a blade of some sixty centimeters in diameter, and a petiole of some ninety centimeters. The spines are exactly similar to those of Chamaerops humilis, and the base of the petiole (Fig. 38) forms a network of fibres. Quite recently I have succeeded in germinating a few of the seeds received; the characteristics of the genus Sabal, with the formation of a kind of "bulb," have not been reproduced thus confirming the distinctness of this Palm from Sabal.

The pen and ink drawings (Figs. 36, 37, 38) were made by my son, Axel Robertson Proschowsky, junr., now at the Paris Museum.—*Dr. A. Robertson Proschowsky, Jardin d'Acclimatation, Les Tropiques, Fabron, Nice.*

KEW NOTES.

THE TEMPERATE HOUSE.

Reference was made in last week's issue (p. 78) to the Himalayan section of the Temperate House at Kew, which forms one of two large wings, each separated by an octagonal glasshouse from the main structure. The large, central building is massively built, with a considerable amount of iron work in its structure and looks as though it will last for untold years. The floor of the house is divided into a number of large, rectangular beds planted with a variety of semi-tender plants, some of which have attained very large proportions.

Entering the building from the "octagon" leading from the Himalayan House, the visitor is confronted by two immense Camellias, one on either side of the path. They measure some twenty-five feet across and, although at one time their flowering was very uncertain owing to bud-dropping, caused by defective drainage, they are now in perfect health and have flowered with extraordinary freedom during the past few years. This winter they are again covered with flower buds, and those who cultivate Camellias under glass will realise how much care must have been expended on them when it is stated that there is no sign of any fungus deposit or sooty blotches such as are often prevalent on these evergreen trees under glass. Just by the Magnolia on the right is a pot tree of Glyptostrobus heterophyllus, one of the most beautiful Conifers in cultivation. It is a deciduous species and also casts a number of its branches each year. Its beauty is due to its brilliant autumn tinting, for the leaves in late summer commence to change to a brilliant apricot passing to crimson, and, as the foliage is not entirely shed until January, it may be imagined how beautiful this plant is in autumn and early winter.

Taking the plants as I noted them, the next of interest is the Nikan Palm of New Zealand, Rhopalostyle sapida (syn. Areca sapida). This particular plant is bearing three inflorescences and there is a crop of seedlings at its base which have sprung up and made a green carpet. A single inflorescence on another of these Palms in the same house contains no fewer than five thousand seeds, which gives some idea of the vast number of seedlings that could originate from a colony of these Palms. The specimen of Rhopalostyle sapida is one of the handsomest of the plants in the Temperate House and has a height of forty-five feet. Near by is another tall Palm, a specimen of Chamaerops excelsa, which has grown to the full extent of the house, and is probably the tallest Palm in cultivation under glass. Its height is approximately sixty feet and it is still in splendid health. Another Palm of exceptional interest is a specimen of Jubaea spectabilis, the Chilian Wine Palm. Since my last visit to the Temperate House this plant has grown enormously and now has a perfectly clean stem up to about fifteen feet. The trunk tapers very slightly and the huge bole is three-and-a-half feet in diameter. The old leaf bases are retained in the upper part of the stem, but after a time they fall off, leaving the trunk perfectly clean.

Amongst the other giants of the house are four Araucarias, A. Bidwillii, A. Cunninghamii, A. Cookii, and A. excelsus. These trees are all over sixty feet high and have long reached the limits of the height of the house and have been stopped on several occasions. The specimen of A. Cunninghamii is nearly a centenarian, for it was introduced to Kew in 1826; A. Bidwillii is a little younger, dating from 1846.

Another plant of great interest is a specimen of Cordyline australis, fifty feet high and bearing many branches at the top. This plant flowers practically every summer and develops huge clusters of sweet-scented flowers. Near to the Jubaea mentioned is a magnificent Bamboo—a plant of Arundinaria Hookeriana, which has perfectly straight culms, the tallest forty feet long. It is one of the giants of the family and the straight, pliant rods are greatly envied by some of the juvenile visitors to the Temperate House who would like to possess them for fishing rods.

An experiment is being conducted in this large glass house with Java Rhododendrons to see if they will thrive in a cool house of this nature. Up to the present they are all succeeding as well as could be wished, although it is too soon to say if they will continue to do so, but seeing that the thermometer in the Temperate House this winter has, on occasions, fallen so low as 34° the promise is hopeful. The bed of these Rhododendrons is near to the main entrance on the north side, and the whole of the iron work of this handsome entrance is festooned with plants of Cobaea scandens.

Amongst the relatively smaller plants in the beds, but all of which would appear of large size in ordinary greenhouses, are Rubus cissoides var. depauperatus, the leaf blade of which is reduced to a small piece at the top of the mid-rib, which, with the stem, performs the functions of the leaves. In New Zealand this plant is called the Bush Lawyer, for owing to its thorny nature the inhabitants in that country declare that one cannot get away from it.

A beautiful tree Senecio, S. grandifolius, is bearing masses of the characteristic yellow flowers on the top of its tall, erect stem, which is furnished with bold, handsome foliage, some of the leaves being as much as two feet long. An interesting pot plant was observed in Pseudopanax ferox, an extraordinary Araliad, having its foliage hanging at an angle of about 30° to the stem.

The Kew plant of Camellia reticulata is of special interest because it is the finest example of this species in cultivation under glass. It has grown to a very large size, and last year bore five hundred of its beautiful flowers. It is again showing evidence of a similar fine display this season.

Amongst the Grevilleas I noticed G. bipinnatifida, a distinct species with bi-pinnate leaves, which are broad and ovate and not in the least like those of G. rosmarinifolia, which grows adjacent. Both specimens are some eight to nine feet across and seven feet high. G. asplenifolia, which is known in the trade on the Continent as G. longifolia, has long, lanceolate leaves that are coarsely serrate, and this species is now on the point of blooming.

At one corner of the bed is a very handsome evergreen, Griselinia lucida var. variegata, a broad-leaved species and much showier than G. littoralis Those living near the seaside in warm districts are recommended to obtain this plant for their gardens, for it is, indeed, a beautiful evergreen.

Daphne cannabina, the Indian Paper Daphne, is in flower, but the blossoms have no scent. The white, tubular flowers are a little larger than those of D. odora.

The large plant of Magnolia fuscata, which gave such a characteristic perfume to the south-west end of the house in the late afternoons, when in bloom, has gone, but a smaller one has been planted near to where it grew. The old Pitcairnia, too, has disappeared, and so has Rosa gigantea, but Semele (syn. Ruscus) androgya is growing as luxuriantly as ever by the stairs leading to the gallery, and many of the shoots are now trained up strands of string. This Ruscus entirely encloses the staircases to the gallery on both the north and south sides.

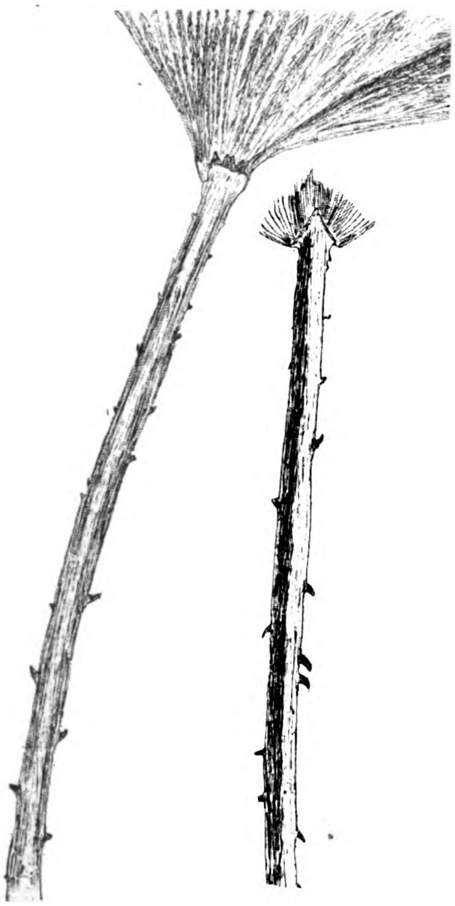

FIG. 37.—ACANTHOSABAL CAESPITOSA.
Showing petioles, spines and leaf bases.
(see p. 92.)

The collection of Acacias in the Temperate House is one of the most extensive in cultivation in this country, and the peculiar smell which one always associates with the Temperate House at Kew is said to be due to the roots of the Acacias. The number of these plants grown in the Temperate House is much too extensive for me to deal with the species in detail, but I may mention the grand specimen of A. Baileyana which is in full flower just now, and one of the finest of the species from a garden standpoint.

A grand specimen of Eucalyptus ficifolia, a beautiful scarlet-flowered species, is on the point of blooming in a bed on the east side of the house. It is a fine example of this showy flowered Eucalyptus, and has attained a height of some thirty feet.

These are but a few of the many interesting plants in this giant plant house, which is interesting at all seasons; genial in its temperature in winter and cool and restful during the hottest time of summer. *T.*

NOTES FROM WISLEY.

At this time of the year it is interesting to look around and to observe what berries have survived the ravages of wind, rain, frost, and the birds. The weather has ruined the coral fruits of the Berberis hybrids at Wisley, but many species of Cotoneaster to be seen in these gardens are still decked with berries.

Among these, Cotoneaster lactea, which seems to be intermediate between C. serotina and C. glaucophylla, has this year fruited freely for the first time. In its young stages this shrub assumed a sprawling habit, but it has since become more erect and shapely.

The fine specimens of Cotoneaster horizontalis which overhang the pools in the rock garden have now lost all their berries as a result of recent storms, but a plant of this species which spreads its fan-like branches against the wall of the laboratory is still covered in fruit. Some of this, however, had been disappearing, and it was found that it had been taken by a mouse which was subsequently trapped.

A good show of berries is also to be seen on plants of Cotoneaster humifusa and C. rotundifolia. The latter bears large, round, sealing-wax red fruits.

In addition to Cotoneasters, many of the Pyracanthes are still well berried, one of the most conspicuous of which is the yellow-fruited P. linifolia. Many berries also are still to be found on Stranvaesia glaucescens.

After a recent frost, plants of Gaultheria procumbens and the larger growing G. Shallon, which grow alongside many of the paths in the wild garden were most attractive by reason of the white rime which edged the leaves. More elaborate frost effects were seen in the case of Acaena myriophylla with its finely divided foliage, while flowers of Aponogeton distachyon, the Water Hawthorn, were visible above the ice on the rock garden ponds. Several shrubs are now in flower, including Hamamelis mollis, H. japonica arborea, Erica darleyensis, and Berberis japonica. The last has a preference for partial shade; a position sheltered from cold winds should be selected for this handsome evergreen.

In the alpine house one of the terrestrial Orchids, an Ophrys lutea collected by Mr. E. A. Bowles in Algeria, is about to flower for the second time at Wisley. The normal time of flowering for this species under natural conditions is the month of February. Last year, however, it flowered very much later than this as a result of its journey to England.

Other interesting plants in flower in this house are the pink-flowered Omphalodes Luciliae, Erodium hymenodes, and the exquisite little alpine Thrift, Armeria caespitosa. In the frames adjoining the alpine house, many pretty Crocus species are coming into bloom, such as Crocus Imperati, the blue-flowered C. Sieberi and its variety C. S. Edelsten's Early.

A trial of winter Lettuce is in progress, of which over one hundred stocks are being grown. They are, with few exceptions, of the Cabbage type.

The trial of Lettuce in 1919 was very successful and the splendid developments of the plants a great surprise to many who regard the Wisley soil as being light in texture and poor in quality.

It is interesting to record that plants of a blue Felicia sp., which with many other South African plants were grown last year at Wisley in connection with the British Empire Exhibition, still continue to bloom in one of the heated houses.

Reports from the mycological department disclose a new host plant for the silver-leaf fungus, which has now been discovered on Cistus augustifolius. *J. L. G. White.*

BOG GARDEN.

SARRACENIA PURPUREA.

This is the hardiest of the Pitcher plants, and although it is one of the oldest of plant introductions to our gardens, it is not often seen outside botanical collections. We grow it in the bog, a plentiful supply of leaf-mould or fibrous peat being introduced so as to make a spongy mixture, but it has also succeeded in the rock garden, chopped Sphagnum being added to the above materials and some of the moss laid over the surface. In such conditions it is essential to give the plant ample water during the growing season.

There is a strange fascination about the hooded, horn-like leaves of S. purpurea, which make a bold tuft about one foot in height, the glossy green foliage being marbled with vivid crimson, some of the leaves entirely assuming that colour. Nor is this all, for the big yellow flowers, on stalks nearly one foot high, are by no means unattractive.

The only attention that this singular plant seems to need when in the bog is an occasional light top-dressing of leaf-mould and peat, and it may be desirable in some places to protect the tender spring leafage from keen winds.

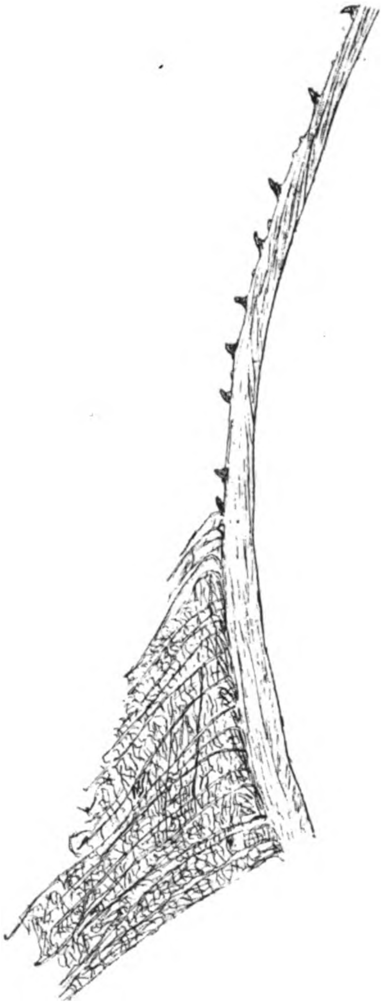

FIG. 38.—ACANTHOSABAL CAESPITOSA.
Showing base of petiole, with net-work of fibres.
(see p. 92.)

TROLLIUS PUMILUS.

Among the many Globe Flowers which brighten the bog garden and waterside in summer, T. pumilus is one of the most distinct. Though it does not grow to more than about six inches in height the flowers are comparatively large, and instead of being incurved, the golden sepals stand out as flatly as those of a Buttercup.

The foliage is also markedly different from that of most species and varieties of this genus, the leaves being thick and fleshy and bluntly lobed. *J.*

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Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

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THE GARDEN IN ANTIQUITY.

I.—EARLY PERSIAN INFLUENCE.

THE earliest beginnings of garden-craft are lost in the mists of the hoary past. Long before man had learned to write he had acquired the art of planting and sowing. The legends which abound in Eastern literature respecting the gardens of the gods, the bowers of love, the Apples of Hesperides, and the arbours of devotion, reveal a high state of culture, and could only emanate from poets and historians who had inherited age-long traditions relating to horticultural pursuits. Gardens are mentioned in Homer, Herodotus and Xenophon: they occupy a large place in the early literature of the Hebrews, figure in the ancient classics of China, are associated with the youth of Buddha, and, more remarkable still, are pourtrayed on the ancient monuments of Egypt, Assyria, and Chaldaea. If the oldest instruments which have come down to us from the stone age are reminiscent of war and the chase, they are closely followed by implements which were needed for the cultivation of the soil, the pruning of the vine, and the other processes by which the activities of the gardener are forwarded. The study of these pre-historic tools, and of their lineal descendants, forms a fascinating chapter in the story of our craft, and will come up for consideration as the review of the past progresses.

It is intended in this series of papers to try and ascertain which of the races may be regarded as having led the way in this noble art. At present our knowledge of the earliest inhabitants of Asia is too imperfect to allow of our saying how great or how small their influence may have been upon the garden-craft of the great Aryan family, of which we form a part. It seems, however, to have been considerable. The Chinese and their allies, long famous for their love of the garden, are descendants of a race which early made its mark in horticulture and agriculture. The two, in the earliest times, were one and the same, and in setting forth the life-history of the garden, allusion cannot entirely be avoided to the sister art of agriculture. No history of our subject could be regarded as satisfactory which did not give attention to Turanian origins, and it will therefore be found necessary at a later stage to revert to that branch of the subject.

For the present, however, it must be recognised that tradition has almost invariably pointed to the district lying to the north and west of the Persian Gulf as the site of the Garden of Eden or the earthly Paradise. The fertile valleys of the Euphrates and Tigris, with their tributaries, supplied to the early historians of our race the ideal conditions for such a delightful abode. The man who penned the words: "The Lord God planted a garden eastward in Eden, and there he put the man whom he had formed," must have been perfectly familiar with an advanced state of arboriculture and horticulture. And, since this district holds so high a place in tradition, it may be well to adduce in this place some of the facts which go to show that Persia has, from very early times, occupied a highly advanced position in relation to this subject. The term Persia, however, is here to be understood in its widest sense, since it is to be remembered that Assyria, Babylonia, Media, Chaldaea, Armenia and even Arabia have been so involved in the course of the ages, in each other's well-being or evil fortune as to make it impossible always to separate the one from the other.

The first point of importance relates to the name originally given to the garden or park which has overshadowed every other in whatever language, and gathered around it an enormous mass of legend and lore in every land where the Aryan speech is employed. How infinitely poorer should we all have been had the word Paradise never come down to us. It is the synonym for the place of purest delight and noblest joy. Religious systems as diverse as Parseeism and Mohammedanism, Judaism and Christianity, Romanism and Protestantism; and languages as different as Hebrew is from Greek, Turkish from Latin, Persian from English, Russian from Italian, alike have adopted the word and made it all their own. It is embedded in the mother tongue of every race from the Red Sea to the Irish Channel; it has crossed from Europe to North and South America: it has been used to name the Parvise of our ancient churches, the Paradise Rows of our towns, the Val Paraisos of our popular resorts, the Paradise stocks which we use in our nurseries, and the abode of bliss to which the Christian and the Mohammedan alike looks forward as the reward of fidelity when he passes into the unknown. There is hardly to be found, in any language, a word with so romantic a history, or so rich in varied and high association.

The word Paradise came from the East along more than one route. Our English forms of the word—for there are two, viz., Parvise and Paradise—came through the Romance languages. French and Latin, Spanish and Italian, Swedish, Danish and German, with many other tongues, give us the same form of the word, which resembles the Greek *paradeisos*. In Hebrew, however, it is *pardes;* and, though the same word, it has a somewhat different history. Both the Hebrew form and the Greek take us back to Persia whence the term originally came. In the Greek Lexicons we find it stated that *paradeisos* is an Eastern word used in the Septuagint for the Garden of Eden, and that it means a park or pleasure grounds. It occurs in the writings of Xenophon who more than once visited Persia, and introduced it thence into his mother-tongue. Thus, in the Anabasis, we read that Cyrus had a palace at Cetaenae, together with a large park (*paradeisos*) full of wild beasts. The river Maeander, whose springs issue from the palace itself, flows through this deer park, and through the city. Xenophon's form of the word is based on the old Persian or Zend *pairida'za*, which means a piece of ground surrounded by high walls, an enclosure, a garden or park.

The Jews at the time when the Song of Solomon was written had also borrowed the word, but not through the Greek. They modified it to *pard's*, and in that form it is found more than once in the Hebrew Bible. Passing into the current speech of the Holy Land it was naturally adopted as a synonym for the abode of the blessed after death. Hence it occurs in the New Testament under its Greek form *paradeisos.* "This day shalt thou be with me in paradise" is the promise given to the dying thief. St. Paul (2 Cor. XII. 4) speaks of one who was caught up into paradise, while in the book of Revelation (II. 7) he who overcometh is to eat "of the tree of life, which is in the midst of the paradise of God." Thus the New Testament closes with an allusion which takes us back to the Garden of Eden.

It must not be understood from this that the Persians are regarded as the first to practise the arts of arboriculture and floriculture. Layard is doubtless correct in suggesting that the great Assyrian monarchs may have been "the first to have those enclosed parks or paradises which were afterwards maintained at so vast a cost by the Persian Kings"; but it is from the latter, nevertheless, that we derive the name, and it was they who made the park so popular in all later times. Of Assyrian gardens there will be occasion to write in due course, and then it may be possible to see how these early races were indebted the one to the other.

From the foregoing it might be inferred that it was not so much the garden as the spacious preserve and hunting ground for which Persia was famous, but in the next paper this idea will find modification. The modern Persian form of the word paradise is *firdaus*, from which came the name of the famous Persian poet Firdausi, just as from our word park we get the personal name Parker. Four different paradises were celebrated in Persian poetry, one of them being the plain of Damascus, which gave rise to the well-known saying of Mahomet: "Man can have but one Paradise," and he would forego an earthly that he might gain a heavenly. Firdausi, in writing of paradise, does not use the Old Persian term *pairida'za*, but introduces another word for garden, *behischt*, which shows that in later times the vocabulary of his race was not limited to one word when this subject was mentioned.

Such then is the real history of the word Paradise. As Max Müller informs us, "it is an Aryan word, but it does not exist in Sanskrit. It was first formed in Zend (or Old Persian), and transferred from thence as a foreign word into Hebrew and again into Greek," and thus into every language of the Western World. *Hilderic Friend.*

TREES AND SHRUBS.

RHODODENDRON HIPPOPHAEOIDES.

(SEE SUPPLEMENTARY PLATE.)

THE supplementary plate presented with this issue illustrates one of the most distinct and valuable Rhododendrons for garden ornament among the newer introductions from China. R. hippophaeoides is a native of Yunnan, apparently a fairly common dwarf shrub, found growing at from 10,000 feet to 14,000 feet elevation.

Mr. F. Kingdon Ward collected the first recorded specimens along the Valley of the Chung River, growing as a carpet, or in tufts, in the open Pine forests. For its first introduction to cultivation we are indebted to Mr. George Forrest, who, during 1914, collected this very pretty Rhododendron in four localities.

Both as a wild shrub, and under cultivation, it is a variable plant. The two collectors give the height as ranging from nine inches to five feet. The bushes are freely branched and fairly upright in growth, at least cultivated plants six to nine years old give that impression. The leaves are oblong, or narrowly oval, three-quarters of an inch to one-and-a-half inch long, and one-third of an inch to half an inch wide, glistening with silvery scales, hence the specific name, in allusion to their resemblance to the leaves of the Hippophaë or Sea Buckthorn. The flowers are borne in an inflorescence of four to eight blooms in a cluster terminating the branchlets. They average an inch in diameter, and vary considerably in colour and include lavender-blue, deep purplish-blue, blue-purple, and pale bluish-rose whilst amongst a batch of seedlings raised at Kew two plants had flowers of a pretty rose shade.

R. hippophaeoides is not only a very valuable addition to cultivated Rhododendrons, but it is easy to cultivate and readily propagated from seeds and cuttings. The latter root freely when made of the maturing young twigs towards the end of July and during August, inserted, as in the case of Ericas and Callunas, in sandy soil under bell-glasses, cloches, or handlights. The free growth of this species, and the profusion with which the flowers are borne during April and May render it a singularly attractive plant for beds, and grouping along the front of shrubbery borders. In most seasons there are also a few flowers on the plants in autumn, but as these detract from the normal spring display, their appearance is a questionable advantage.

EVERGREEN SHRUBS FOR SHADE.

Among the difficult problems which planters have to contend with is the furnishing of ground beneath trees and corners or borders darkened by buildings or trees. When dealing with positions beneath trees, not only has the lack of light to be considered, but the ground is oft-times impoverished by the prevalence of tree roots, and the lack of moisture in summer. A little good soil or manure may be added when planting the shrubs to give them a start, but any sustained effort to enrich the ground by manuring or mulching, mostly tends to honeycomb the ground with roots and to make matters worse for the nourishment of the undergrowth.

One of the best of the taller shrubs for the purpose is Aucuba japonica which, in particular for town gardens, has no rival for shaded positions and poor soils. In some positions the spotted-leaved sorts are attractive, but to plant beneath trees in particular, there is a good deal to be said in favour of the rich, fresh colour of several green-leaved forms. Under deciduous trees, not too densely clothed with branches low down, the Holly, Box, Euonymus japonicus and Rhododendrons ponticum and Cunningham's White are useful. So also is the Laurustinus (Viburnum Tinus), but this is more, perhaps, a shrub for north borders and corners where buildings exclude the sun.

In semi-shade the Bamboos are useful, but these must have moisture. The best to form a low, dense carpet, one to one-and-a-half foot high, is Arundinaria vagans or pygmaea.

Our native Butcher's Broom, Ruscus aculeatus, two feet to three feet high, and Ruscus hypoglossum, growing about one foot high, are very valuable evergreens to grow in positions which are heavily shaded. Both these plants may be increased freely by division and they will thrive in quite poor soils.

The Sarcococcas are distinct, low-growing shrubs forming an attractive undergrowth beneath trees. One group at Kew, in particular under a large Holly, is an excellent example of their value. There are three species, all natives of China. S. humilis, one to one-and-a-half foot; S. ruscifolia, two feet; and S. saligna, two-and-a-half feet to three feet high. They may be readily and rapidly increased by division. The white flowers are small, but pleasingly fragrant, and borne in late winter and early spring.

The Oregon Grape, or Mahonia, Berberis Aquifolium, is one of the best evergreens to plant in quantity beneath deciduous trees. Its normal height is four feet to six feet, but cut back each year in spring it forms a pleasing subject for furnishing the ground. An average height of two feet is useful. The leaves are at first glossy green, but change to a purplish, bronzy or reddish tinge. The yellow flowers in February and March are followed by clusters of violet-black fruits, hence the name of Oregon Grape.

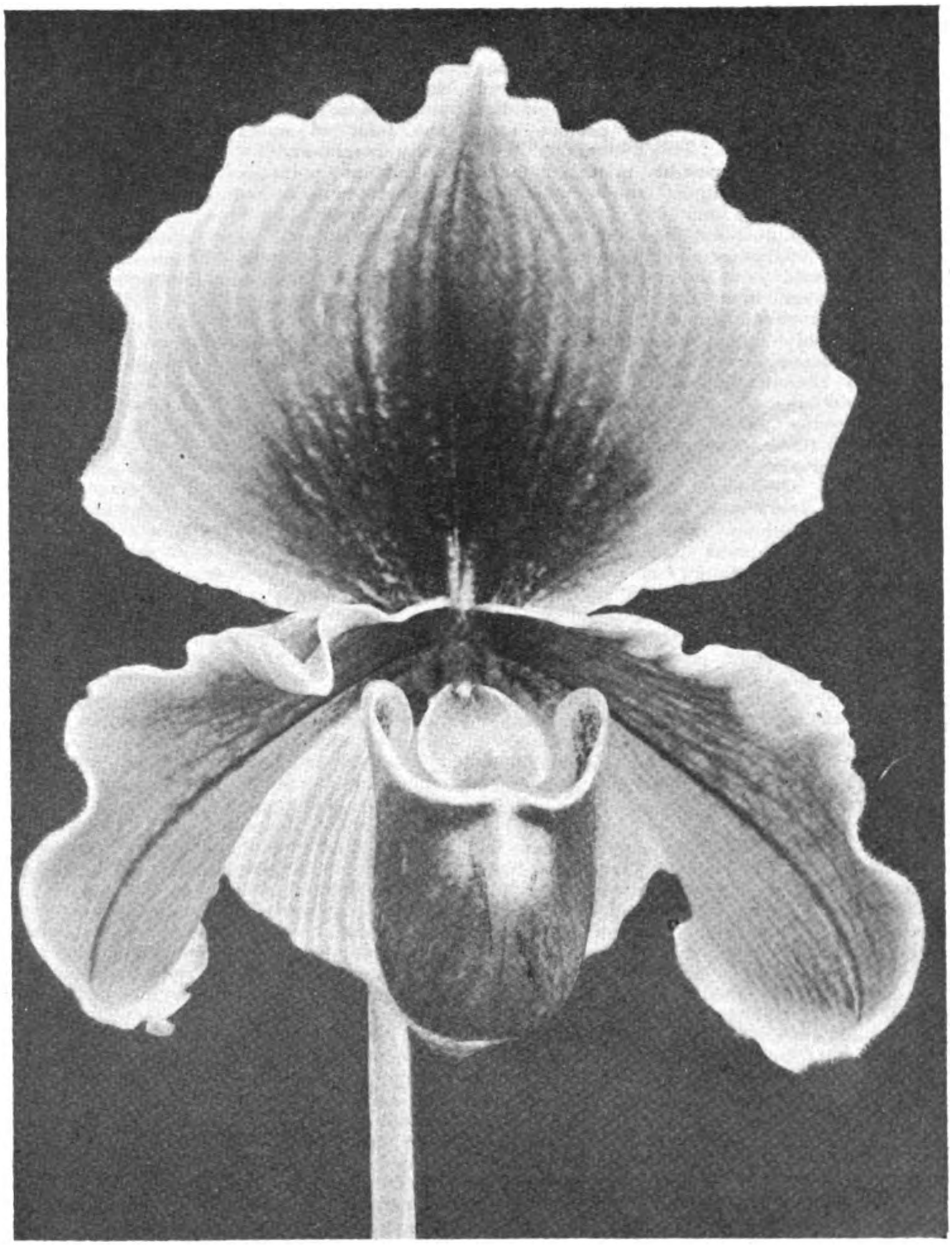

FIG. 39.—CYPRIPEDIUM MRS. WILLIAM PICKUP.
R.H.S. Award of Merit, January 27 (see p. 82.)

For dense shade there is nothing to equal several forms of the green Ivy. When the conditions permit, large areas are improved by the introduction of groups of the Tree Ivies. One of, if not the best of all, dwarf-flowering shrubs for semi-shade is the Rose of Sharon, Hypericum calycinum. To maintain a neat appearance cut the stems down to within a few inches of the ground each year in spring.

The dwarf Euonymus radicans makes an admirable ground covering for shaded positions where grass will not thrive. It is readily and rapidly increased by division and cuttings. For damp, shady positions, the Shallon, Gaultheria Shallon, is useful. The plants form a thicket of stems, three feet to five feet, or rather more in height. As old plants do not increase happily by division, begin with young plants raised from seeds or small pieces propagated by division under glass.

Both the Periwinkles, Vinca major and V. minor, are useful trailing shrubs to plant beneath deciduous trees and in damp, shady corners. Cuttings and division offer ready means of increasing these plants.

Having planted the shrubs is not sufficient. For the first year in particular special attention must be given to watering. Pruning, trimming, and thinning are also important cultural details necessary to maintain healthy plants and present a well-kept appearance. *A. Osborn.*

THE CONTROL OF THE NARCISSUS EELWORM.*

(*Concluded from page 79.*)

I now venture a few words on the correct usage of those sterilising apparatuses which have been specially constructed for the work. Some growers have their own devices: on these I do not intend to pass an opinion. It has been my privilege over a period of years to visit a number of growers during the sterilising season, and on not a few occasions I have observed that, while some make a burden of the operation, others have such perfect control over the treatment that the whole of the sterilising is conducted with perfect ease and with success.

One of the commonest mistakes made is that of overloading the apparatus. The apparatuses are made to take stated quantities of bulbs, and the grower should not attempt to exceed these quantities. Again, it should not be necessary to have to tell a grower that all the bulbs should be completely covered with water. Yet, in a number of cases, I have seen the sterilisers crammed so tightly with bags of bulbs that the uppermost layers have not been immersed.

This trouble and several others arise mainly, I think, because the maximum volume of water is not employed at the beginning of the day's work. After the three hours' treatment the tank or tanks are unloaded; there is, as may well be imagined, a consequent loss of water, but while one worker may lose a negligable quantity, allowing the water to drain back into the baths before the bags are set down, others waste gallons upon gallons. Reloading takes place immediately, and the same weight of bulbs as before is placed in the water. If the decrease in the volume of water has been very great, owing to the careless unloading, the temperature falls very low: many schemes have been evolved to increase the volume of water and its temperature, usually with not very satisfactory results.

In the Hearson Sterilising Apparatus sufficient space has been allowed between the outer and the inner tank to allow for a reasonable amount of wastage, and, given care, even after three or four soakings there should still be a sufficient volume of water to cover completely the inner receptacle. On the change of soakings the temperature naturally falls, but it should not fall more than 5° or 6°, and with an additional gas ring, working independently from the controlled supply, or an extra lamp, if oil is being used as fuel, the required temperature may be gradually regained within twenty minutes to a half hour, when the auxiliary supply of heat should be dispensed with. The period of three hours should be recorded from the moment the bulbs are placed in the bath, as, in deciding upon this three hours' treatment, allowance was made for this fall in temperature.

It has been my experience with the Hearson Bulb Bath (and I know there are others who will bear me out in this statement), that given a reasonably good supply of gas—or in the case of oil, well filled and carefully trimmed lamps—once the regulator is carefully set it should require very little attention. But what frequently happens is that when the apparatus is loaded up, the temperature falls a degree or two; again examined a minute or so later, the mercury column is seen to be still falling, and after about five minutes it becomes more or less stationary at 5° or 6° below the desired point. It is not until after the whole mass of bulbs becomes uniformly heated through and is of the same temperature as the water—a process which takes ten to fifteen minutes—that the temperature begins to rise again. Some users display a little impatience at this stage, and amongst the commonest practices is that of adding very hot water to serve the dual purpose of raising the heat and regaining the volume of water lost by faulty unloading, with the result that the thermostatic control is upset.

Other workers add to their burdens by meddling with the adjustment of the regulator and the outcome is usually a state of mental confusion. With the Barford and Perkins' Plant also the temperature should not be unduly speeded up and the inlet of extra steam should be gradually increased.

Another point often overlooked is the correct reading of the thermometer; it should always be read level with the eye, and whilst at this point it may be advisable to remind users to see that they always have a spare thermometer in reserve for fear of an accidental breakage to the one in use. I have often seen makeshift thermometers employed, some of which, if accurate, it was impossible to read within two degrees; and on one occasion I well recall seeing a worn-out dairy thermometer, long since past its period of utility, employed, which, when tested, showed a minus 8° F. inaccuracy. There is just one other item often lost sight of, namely, that thermometers should be tested at the commencement of the season. The National Physical Laboratory and other institutions undertake these tasks, and will give a correct reading with 1/10th of a degree accuracy at a very moderate charge. I do not wish to elaborate any further on these faulty measures; it is sufficient to say that many of them should never arise, but where they do exist, it is usually from such sources that unsatisfactory reports on the treatment emanate.

It has often been asked whether all bulbs, regardless of their size, should receive the three hours' treatment, or if smaller bulbs would benefit equally well if the period were reduced from half-an-hour to an hour; or if the largest-sized bulbs should not be treated a little longer, say for four hours. It would be a very difficult matter to decide these points, for we have to remember that sizes in bulbs differ considerably, according to the districts in which they are grown, and such information, even if it were obtained, would tend to confuse the grower rather than help him. With the smallest-sized bulbs I do not think the saving would be more than half-an-hour; the bulk of the stocks would require a three-hour treatment and in the case of large mother bulbs, such as Emperor and King Alfred, a four hours' treatment could be given, provided the grower is prepared to risk damage to the flowers.

A question often asked is one concerned with the treatment of infected soil. In 1917 experiments were commenced on a badly infected field to test a number of chemicals generally recommended for soil sterilisation, and in no case was the eelworm destroyed. The experiments were discontinued after one year. Within recent years, however, much attention has been and is being paid to sterilisation by means of chemicals, and it is not beyond the realms of possibility that some substance will be found which is economical in use and effectual in destroying the pest. Steam sterilisation in the field is also receiving consideration, not solely with the object of killing eelworms, but with a view to increasing the general fertility and destroying noxious pests and weeds in the soil. At one time it was thought that ground once infected with eelworm would remain so for a long period of years.

Results of recent experiments, however, have proved that such land may be safely used again for the Narcissus crop after three clear years, provided that in the intervening period neither Narcissi nor Onions (which may also become directly infected from the Narcissus) occupy the land.

The ground concerned in these experiments was highly infected; so severe, in fact, was the disease, that in April, 1917, the crop, or what was left of it, was not worth the rent of the land it occupied, and the bulbs were not lifted but ploughed in. Potatos were planted immediately. In the autumn of 1920, plots were set down stretching here and there about the field, and known healthy, sterilised bulbs were planted. The bulbs were left undisturbed for three years, and each year the foliage was examined for the presence or absence of eelworm. In no single case was a diseased leaf found, so we may conclude that where a general rotation of crops is practised, ground infection need not unduly concern the grower.

There are, however, numerous instances where the bulb grower does not practice a general rotation, owing to restricted acreage, and in such cases effectual means for treating infected ground would be well received. The cost of starving out the eelworm is largely a time cost rather than a monetary cost, whereas chemical control involves essentially the latter.

I close with a plea to those who are using the hot water treatment to see that the best use is made of it, and to make certain that the bulbs receive the correct treatment before, during, and after sterilisation.

A Lecture on "The Control of the Narcissus Eelworm," delivered before the Technical Committee of the Chamber of Horticulture, by Mr. J. K. Ramsbottom, N.D.H.

A NEW PEST OF GREENHOUSES.

TORTRIX PRONUBANA.

This moth is an ally of the Oak Tortrix which has caused so much damage to pure Oak woods in Surrey, and it may become a serious pest in gardens. Already much damage has been done by the caterpillar of Tortrix pronubana in greenhouses in the south, especially in the Thames Valley area around Kew.

The caterpillar, when newly hatched, is not much more more than one-eighth-of-an-inch long, and when fully grown is not much more than half-an-inch to five-eighths-of-an-inch long. The habit of the caterpillar is to roll a leaf by means of silk, or to spin two or three leaves together, in which it remains to feed. When disturbed it usually wriggles backwards and falls off the leaf or leaves on a thread of silk, thus escaping.

The life history of the moth has been worked out by Dr. R. C. Fisher,* who carried out several control experiments. Insecticides were found to be useless, the only good method of control being hand picking.

The larvae attack numerous plants belonging to a number of natural orders, but are worst on Acacias, particularly A. longifolia and its var. mucronata, and A. armata var. pendula. Grevilleas are badly attacked, as are also Dianthus sp.

Dr. Fisher in his paper gives a list of host plants, and the following not mentioned by him are also attacked:—Tibouchina moricandiana, Erica melanthera, Citrus aurantiaca and its var. Bigardia, Rhododendron Forsterianum, R. indicum and its numerous varieties; Luculia gratissima, Eucalyptus Globulus and E. citriodora. *Wilfred O Corbett.*

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* The *Annals of Applied Biology.* Parts 3-4 Oct. 1924.

GOVERNMENT BOTANIC GARDENS.*

(Continued from page 62.)

THE history of the two great East India Companies affords a clue to these diversities of purpose. The rivalry which marked their careers was the outcome of a community of interest in the products of what were known to classical and renaissance naturalists as "aromatic plants." These plants were often linked with "coronary" ones, much as "esculent plants" were associated with "medicinal" ones. Yet they were less frequently grown in classical gardens than their "coronary" companions; those best known were common on the hillsides of Greece and Italy, those whose products were most in demand rarely found the climate of the northern Mediterranean seaboard congenial. Supplies of these products reached the ancient world, largely by way of the Red Sea, from the Emporium Aromatum on the East Coast of Africa, or from Western India and the lands beyond that lay "under the wind." Sellers of the "incense" of Zingis and the "spices" of the two Indias were less reticent regarding these commodities than were those who retailed drugs and the "drowsy syrups of the East." But the confusion as to their characters, manifest in classical allusions to "aromatic plants," is as bewildering as the dubiety regarding the qualities of many of the familiar "medicinal" ones. If those who sold "balsams" and "spices" were more communicative, they were even less well informed than dealers in "simples." Perhaps the Oriental middlemen from whom classical merchants derived their supplies did not always tell the same tale or provide articles true to name.

The fall of the Western Empire caused less dislocation of the traffic in Eastern products than it did to most of the activities of the Latin world. If the barbarians who overthrew Rome preferred European foods, they soon developed a taste for Levantine condiments; the trade in "spices," which flourished during the middle ages, became a Venetian monopoly. It was a wish to break this monopoly that took the Portuguese round the Cape of Good Hope and led them to deprive Arab seamen of the maritime supremacy they had so long enjoyed in the seas beyond the Cape of Currents. It was a resolve to destroy the new monopoly that induced the Dutch to follow the Portuguese and deprive them of their mastery of the Indian Ocean. It was a determination to share in the profits of the spice trade that led the Merchant Adventurers of London to form an East India Company of their own. As regards most Indian products the two corporations could buy and sell on fairly equal terms. But as regards the traffic in "cinnamon, nutmegs and cloves," equally coveted by both companies, the Dutch were at an advantage: they had reached the Indies first and had taken over from Portugal the political as well as the commercial supremacy of Ceylon and the Spice Islands. The example set by the West Indies in forming a Botanic Garden at St. Vincent gave the English East India Company a hint which the Dutch East India Company hardly required. The English Company resolved to form a garden in which to naturalise, if possible, the "aromatic plants" characteristic of, and confined to islands held by the Dutch.

The lead in this enterprise was taken by the oldest of the English presidencies. The Government of Fort St. George established an experimental garden at Samalcotta as a centre in which to grow and from which to distribute the plants that yield "cinnamon, nutmegs and cloves," and another similar garden at Marmalon, to be used, like the garden at St. Vincent which had supplied the idea, for the naturalisation and distribution of economic plants generally. The Dutch in Ceylon, with this example at their door, now formed a garden on the lines of that at Marmalon, in Slave Island, near Colombo. But the effect of the action taken by the Government of Madras that was to be of most consequence to Eastern Asia was that produced on the Government at Fort William in Bengal: the healthy rivalry between the two presidencies could not suffer the one at which the Governor-General resided to lag behind its neighbour to the south. The Bengal Government gave favourable consideration to a proposal by the Secretary to their Military Board that a botanic garden be formed at Calcutta. This proposal was approved by the Court of Directors: the new garden was founded in 1786. From the outset, the Calcutta garden was intended to combine the objects for which the two Madras gardens had been formed. There was a hope that the effort to establish "cinnamon, nutmegs, and cloves," which had failed in Coromandel, might succeed in Bengal; there was a further hope that it might be possible to naturalise in Bengal teak and other trees, from various parts of India and Burma, whose timbers were of importance to shipbuilders, in order that the company might eventually be able to construct new, and repair old vessels with material grown in the vicinity of its own dockyard on the Hughli.

The records of the two Madras gardens show that they differed in more than their original purpose. That at Samalcotta was placed in charge of Dr. William Roxburgh, whose competence as a "phytologist" is established beyond dispute by the recognition accorded his economic labours by the Royal Society of Arts, and whose eminence as a "botanist" was manifested in his great work on the "Plants of Coromandel," prepared while he was superintendent of the Samalcotta garden The advantage to his charge and to his correspondents of a superintendent who "knew plants" and could describe and name them, was that anything raised at and distributed from Samalcotta must be exactly determined and accurately designed. The garden at Marmalon was in charge of a competent "phytologist" who, however, was not a "botanist" in the contemporary sense and as defined by the great Linnaeus. We read in an official letter to the Governor of St. Helena, dated February 15, 1791: "I have forwarded some trees under their Indian names rather than wait for the examination of their flowers and fructification." The Dutch Garden in Ceylon seems in this to have resembled the garden of Marmalon. So, during its earlier years, did the Calcutta botanic garden. But when, in 1793, Lieut.-Col. Robert Kyd, its founder and first superintendent, died, the Court of Directors at home appointed Roxburgh to succeed him and ordered his transfer from the Madras establishment to that of Bengal. With the advent of Roxburgh the Calcutta garden became a botanic garden in fact as well as in name. But this change in the character of the Calcutta garden made it responsible, at least indirectly, for the disappearance of the two Coromandel gardens: that at Samalcotta was given up when Roxburgh left; that at Marmalon was abandoned some years later. When Ceylon was seized by the English, the garden established by the Dutch was abolished. But the Calcutta garden was soon to be directly responsible for the formation of two new gardens, to the east of the Sea of Bengal, modelled on the one which had been made by Roxburgh for the Madras Government at Samalcotta.

When the English took possession of Ceylon they also occupied the Moluccas. The Company, notwithstanding Roxburgh's experience at Samalcotta and Kyd's experience at Calcutta, resolved to repeat, on a more extended scale, their efforts to naturalise "cinnamon, nutmegs and cloves" in India. We gain a more vivid conception of this great experiment from the correspondence of Dr. Francis Buchanan, Roxburgh's friend and successor, than from contemporary official records. Writing from beyond the Magna, on May 10, 1797, Buchanan said to Roxburgh: "I congratulate you on your success from the Spice Islands, though I am much afraid that you will have great difficulty in reconciling the Nutmeg plant to the climate of Bengal. Do not you think that it might be advisable for the Company to form a plantation of Nutmegs, Cloves and Cinnamon near Cape Comorin? For it must be obvious that our retaining possession of the Spice Islands and Ceylon at the peace will be extremely precarious.

Buchanan's fear was justified and the Government of Fort William, when it decided to seek a locality less unfavourable than Lower Bengal, chose Buchanan as the officer to look for it. But the Bengal Government did not send Buchanan to Cape Comorin; the locality they desired must be one within the Bengal presidency. Writing on January 1st, 1799, to his old friend and fellow student, the President of the Linnean Society, Buchanan said: "Last March, April and May I was employed by the Board of Trade in examining the provinces of Chittagong and Tippera to find out the places most likely to answer for the cultivation of spices." Soon after this deputation had been arranged, but before it had begun, Roxburgh was invalided to the Cape. When the deputation ended, Buchanan was directed to act as superintendent of the Calcutta Botanic Garden until Roxburgh should return. Buchanan's letter to Dr. J. E. Smith, therefore, goes on: "My report was unfavourable; but Chittagong is going to be tried, and I shall soon send off a number of Nutmeg and Cinnamon trees to be distributed among the proprietors of the southern part of the Chittagong province, especially in the island of Mascally."

To be continued.

*** The Sir George Birdwood Memorial Lecture, delivered before the** Royal Society of Arts (Indian Section), on **Friday, January 9, 1925,** by Lt.-Col. Sir David Prain, **C.M.G.,** C.I.E., LL.D., F.L.S., F.R.S., late Director of **the Royal Botanic Gardens,** Kew.

PUBLIC PARKS AND GARDENS.

THE Scarborough Town Council have received permission to borrow the sum of £8,400 for the extension of Peacholm Park. The valley through which the stream that feeds the lake in the park flows—nearly half a mile in length—is to be taken in, and this will add over thirty acres to the park. The work is to take three years to complete. The present season's work will consist in the making of paddling and model yachting ponds, the planting of the adjoining banks, and the making of an eight-feet path the whole length of the valley. The bed of the stream is to be raised in places to form waterfalls. Most of the valley will be kept in a semi-wild state, the natural growth, which consists chiefly of Hawthorn and Gorse being interfered with as little as possible. It is intended, however, to find positions for some of the choicer and tender trees and shrubs, as the valley is a warm and sheltered one.

THE Urban District Council of Sowerby Bridge has received the sanction of the Ministry of Health to borrow £4,436 to acquire land for extending Crow Wood Park.

THE City Council of Oxford has accepted a gift of land to be utilised as a playground for the children of St. Clement's. The ground is situated to the north of Magdalen Bridge.

VEGETABLE GARDEN.

THE TOMATO.

(Lycopersicon esculentum. Miller; Solanum Lycopersicum. Linn.)

Whatever attributes may be lacking in this interesting plant it certainly does not suffer from any lack of names.

In addition to the two given above, Gesner (the German Pliny) named it Solanum pomiferum in the sixteenth century, but the leading German traders of our day have discarded the "Apple" and adopted the "Peach" in its stead.

The Tomato is a tender annual, native of the West Indies, where it is said to abound in many of the islands, and so far north as Mexico. The name Tomato, adopted by the Spaniards, is probably a corruption of the Mexican name Tomate. It has been known in southern and western Europe since early in the sixteenth century, but according to Miller it must have been known many centuries prior to the sixteenth, for he introduces it as the Wolf-Peach of Galen, and Galen flourished in Rome during the second century of the Christian era. As Miller described the red and yellow Cherry forms as the Lycopersicon of Galen, I wrote to the Director of the Royal Botanic Gardens, Kew, calling his attention to the subject, and he sent me the following courteous reply:—"In reply to your letter of the 4th inst., I beg to inform you that the first Lycopersicon (L. Galeni) in the 7th edition of Miller's *Gard. Dict.*, commonly called the Cherry Tomato, is generally regarded as only a variety of L. esculentum, Miller. L. H. Bailey in his *Manual of Cultivated Plants* (1924), p. 656, records it as Lycopersicon esculentum, var. cerasiforme, Alef. L. esculentum, Miller, the second species in his *Dictionary*, with large furrowed fruits, is accepted as the typical form, and is that figured in several of the old herbals. Elizabeth Blackwell (*Curious Herbal*, 1739) states that the fruit of this Lycopersicon, called by her Love Apple, when outwardly applied, is esteemed good for inflammations and erysipelas, and other herbalists make similar statements, but they refer to typical L. esculentum and not to the Cherry Tomato, which, according to Miller in the earlier editions of his *Dictionary*, 'is the sort directed for medicinal use by the College in their Dispensatory.' None of the forms of the Tomato appears now to be regarded as medicinal."

To the foregoing eminently clear and satisfactory presentation of the subject it may be well to add the following from the *Herbal* of Dodonaeus, as it throws a very interesting light upon the circumstances which attended the introduction of the Tomato into England. The *Herbal* in question was published about 1554. It was written in the Netherlands tongue, and shortly after it was published was translated by Clusius into scholarly French. A fine copy of this French translation is in the City of London Library at the Guildhall. In 1578 an English translation of the French work was made and published by Henry Lyte, a Somersetshire physician, and dedicated by him to Queen Elizabeth Dodoens being at that time Physician to the German Emperor. A copy of Lyte's translation is to be found in the Lindley Library of the Royal Horticultural Society, and from it the following extracts are taken. Under the heading "Amorous Apples or Golden Apples," the latter the original name given to the fruit by Dodoens, we read, "These strange Apples be of two sorts, one red, the other yellow, but in stalkes, leaves, and growing they be like. They have round gray stalkes, three or four feet long, full of branches; leaves great, broad and long, spread about on every side, deeply cut, almost like Agrimonie; flowers yellowish, growing upon short stems, five or six together; when they fall there come great flat Apples, bunched out on the sides, and of a colour, sometimes red, or yellow, like Oranges or Mandrake Apples, containing the seed. All the herbe is of a strong, stinking savour; it must be sowne every year like Cucumbers, etc. This is a strange plant not found in this country except in gardens of Herboristes where it is sowne. It flowereth in July and August, its Apples be ripe in August and September. This strange plant is now called by the apothecaries in Latin, Pomum amoris, and of some Pomum aureum; in English, Apples of Love or Golden Apples. The complexion, nature, and working of this plant is not yet known, but by that I can gather of the taste, it should be cold of nature, *especially the leaves*, somewhat like unto Mandrake, and therefore, also, it is dangerous to be used. They be not used in medicine, but some do prepare and trim them with oyle, pepper and salt, for to eat. But it is an unwholesome meat, ingendering in the bodie many evill humours."

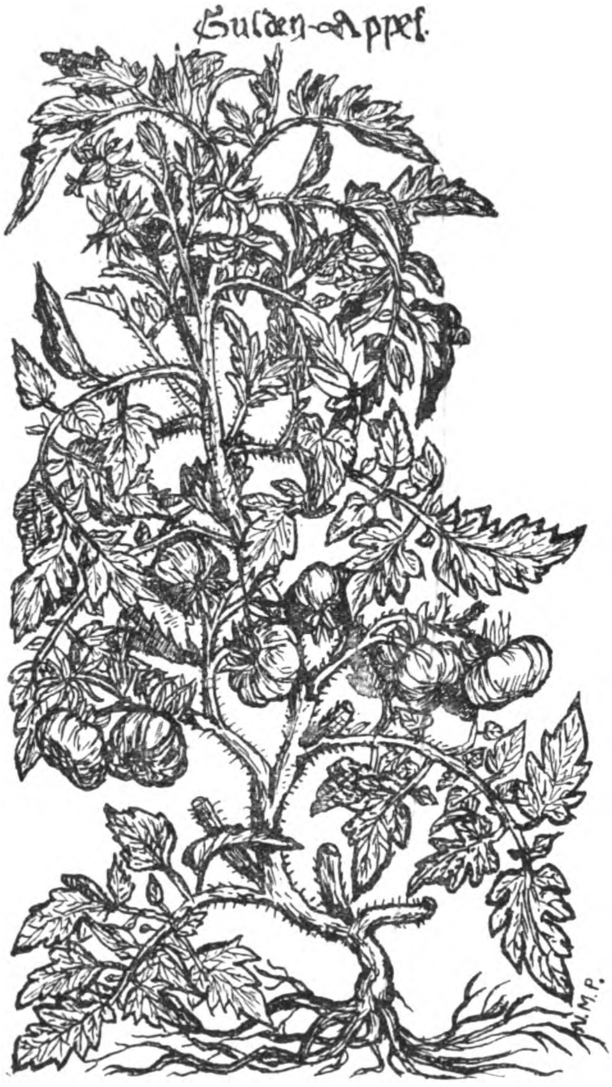
Gulden-Appel.
N.M.P.

FIG. 40.—THE TOMATO OR GULDEN APPLE.

From the *Herbal* of Dodonaeus, about 1557.

Having stated that the West Indies was the country of origin, he goes on to state that "in ancient poetic legends it is named the Apple of the Hesperides, which it was one of the labours of Hercules to procure." A copy of the illustration of a fruiting plant which appears in the *Herbal* is here given (Fig. 40), and will be easily recognised as a good representation of the original Lycopersicon esculentum, Miller.

While it is very difficult to fix a definite date for the introduction of the Tomato into Europe, a fair inference respecting it may be drawn from some interesting historical facts which are common knowledge.

Christopher Columbus, after many rebuffs in various influential quarters, induced Ferdinand and Isabella of Spain to bear the expenses of an expedition of discovery in the western world which he was anxious to undertake. In 1492, he set out on his first voyage during which he discovered Cuba, The Bahamas, and other West Indian Islands. In August, 1493, he set out on his second voyage and discovered Jamaica, one of the most important Islands in the West Indies. There is little doubt that the Tomato was one of the discoveries, and that it soon found its way into the hands of the Portuguese and Spanish gardeners who, at that time, flourished round the coast line of those countries. Being esteemed by them "a cooling and nutritive fruit," it soon became a common article of food. Somewhere near the beginning of the sixteenth century, Miller goes to the Spaniards for its popular name, the Tomato, and tells us "that they were used in many of their sauces, and that the Italians and Spaniards eat these Apples as we do Cucumbers with pepper, oil, and salt; some eat them stewed in sauces, etc., and *they are now* (1759) *much used in England*, especially the second sort. The fruit gives an enjoyable acid to the soup, though there are some persons who think them not wholesome from their great moisture and coldness, and that the nourishment they afford must be bad."

From the foregoing it appears that the atmosphere of mistrust which surrounded this fruit in the time of Lyte (1578) still persisted at the end of the two centuries intervening, and some traces of which still remain. There consequently does not appear to have been any serious efforts made to develop new and improved forms such as might have been anticipated.

Dirk and Voorhelm, the Dutch seedsmen, in 1754, offered only the large red and large yellow, and the Cherry red and yellow forms; while John Mason, the Fleet Street seedsman and net maker, only quoted two varieties forty years later. But sometime in the nineteenth century a complete change took place, possibly in connection with the great exhibition in 1851, which brought many foreigners to our shores, and gave a stimulus to foreign travel on the part of our own people. It is noteworthy that in its 1858 edition, *The Scientific and Literary Treasury* states: "The Tomato is now cultivated in many other parts for the sake of its large scarlet or orange-coloured fruits which many esteem a great luxury. It is one of the most common articles in Italian cookery, and its use is rapidly increasing in England."

Before leaving this branch of the subject one more reference to Galen's connection with the Tomato may be permitted.

It is remarkable that at the time that Miller was stating that the Cherry-shaped variety was the L. Galeni, his friend and admirer, Jas. Justice, was affirming that the two large-fruited varieties were entitled to that name. There appears to have been some lapse on Miller's part, and the question, how, when, and where, did Galen get into touch with the Tomato, remains unanswered.

The neglect and suspicion which greeted the Tomato at its advent have been amply atoned for in our own day. Everybody nowadays connected with its culture appears to feel it incumbent upon them to put at least one new variety into commerce. The result is a most unwieldly and bewildering list of names, the majority of which, in the very nature of things, appear to be synonymous. This was amply demonstrated in the trial conducted at Wisley. At the same time there is no justification for the charges of wholesale deception which are hurled broadcast by irresponsible writers, who know little, and understand less, about the matters on which they write. A slight variation which occurs with one variety in one grower's plants may occur in several different places at the same time, and each grower might justly claim the novelty as his own, but it must be admitted these variations are very slight and do not justify the addition of another name to an overladen list.

The points in a Tomato which have to be considered concern the size, form, colour, solidity, flavour, fruitfulness, and adaptability for travel of the fruit; hardiness or otherwise of the plant, is a secondary consideration in England, where, for climatic reasons, such a large percentage has to be cultivated under glass; but earliness is a most desirable quality. It is universally admitted that Britain leads with the indoor varieties, while America and France are easily first with varieties for open air culture, and Italy, by reason of the special use which has been developed in that country, excels with the cluster section.

The following is an abbreviated list of a few of the best varieties from which a special selection may be made according to the fancy of the prospective grower. As the Tomato varies very much under different cultural conditions; the best plan is to obtain reliable seed of several varieties, and be guided by the results. The plant needs an abundant supply of moisture and good clean manure, and if the cultural notes given from time to time in *The Gardeners' Chronicle* are intelligently followed, there need not be any fear of the result.

Largest varieties.—Irrespective of colour. Ponderosa, purplish-red; Ponderosa, scarlet; Crimson Cushion, one of the very best; Mikado, scarlet; and President Garfield, big and ugly, but of very good quality: fruits of the last weigh 2 lbs. to 2½ lbs. each.

Purple varieties.—Acme, and Beauty, both good in every respect except colour; they succeed best in a hot climate.

Crimson varieties.—Matchless, Duke of York, Livingstone's Perfection, and King Edward.

Scarlet varieties.—Best of All, Chemin Rouge, Champion, Kondine Red, May's Favourite, Marvel of the Market, Recruit, Ailsa Craig, and Sunrise.

Yellow varieties.—Green Gage, Golden Queen, Golden Nugget, Golden Trophy.

Cluster section.—The plants of this section should be pulled up in the autumn, while bearing their fruit, and hung up in a sheltered room where there is no danger from frost: the fruits ripen on the plants and may be picked as required for use. Pear-shaped, red, and yellow: King Humbert, oval, red, best of all: Prince Borghese, fruits like an egg-Plum, tapering to a point, bearing large clusters of bright scarlet fruits; Wonder of Italy, very early and productive, producing clusters of fifty or more solid, Plum-shaped, scarlet fruits of good keeping quality.

Other varieties of interest from various standpoints are: Cherry Red and Cherry Yellow, both very productive, but lacking in solidity and flavour. The association of the red variety with Miller, gives it an added interest. Red Currant (Solanum racemiflorum, Dun), is more ornamental than useful. It may be eaten by those who relish acidulated insipidity. Apricot, Luscious, or Peach, is a very distinct, tall-growing, rather late variety with fruits of a pleasing deep-pink colour, covered with a slight bloom like a Peach; flavour inclined to sweetness; the nearest approach to a dessert fruit.

The Strawberry or Husk Tomato (syn. Cape Gooseberry) is a species of Physalis, and very pleasant to the taste. It is easily grown in England in hot summers. It is only right to state that many very excellent varieties of Tomatos are omitted from the foregoing list owing to lack of space. *S. B. Dicks.*

HOME CORRESPONDENCE.

The Best Early Apple.—I am surprised that no mention was made by *Seasider* of James Grieve, which is a good dessert Apple—the best I know—but I have not seen St. Everard, which may be earlier and quite as good. *F. D. H.*

Bees and Apple Fertilisation.—I have been a beekeeper for the past twenty-seven years and am much interested in this subject. The point raised by your correspondent seems to be that the bees prefer other flowers to Apple blossom. It is a well-known fact that bees (apart from the flow of nectar) do prefer certain flowers. Sir John Lubbock found, years ago, that even colour had an attraction, but I have never seen bees neglect Apple blossom when the weather was suitable for them to fly. Your correspondent, *Market Grower*, states that he has seen them streaming away to Clover and Charlock—I have little experience with Charlock—but I cannot recollect seeing White Clover sufficiently advanced to attract bees when Apples are in bloom. Mr. Molyneux states he put one swarm in his orchard. Unless this swarm had been very specially treated, I should have been surprised if he had seen many bees amongst the Apple blossom in 1923 and 1924, more especially if the weather was anything like what it was here—cold at nights, wet and sunless, just the sort of weather when bees cannot work and no nectar flows. What was the result? Plenty of bloom, no bees, and no fruit. I venture to suggest if the weather had been suitable for the bees, they would have done the pollinating. I am convinced the bees are of great value to fruit growers, and especially amongst self-sterile varieties of Apples. *James Mills, Shavington Gardens, Market Drayton.*

——I am unable to state if bees assist in the fertilisation of Apples. I know, however, that bees will sometimes attack ripe Peaches. During the season of 1922, in a Berkshire garden, bees proved very destructive to our ripe Peaches. Perhaps during that season of dull, wet weather, the flowers were not providing sufficient attraction, and therefore these busy bees turned their attention to the fruit quarters. I had not previously noticed any damage to fruit from bees, nor have I met with any evidence to this effect since the season mentioned above. Of course, bees are very attentive to Peach blooms, and no doubt assist in the fertilisation of this fruit. *C. Ruse.*

The British Carnation Society.—I am of the opinion something should be done to improve this Society on the lines of the National Rose Society. As this Society is at present constituted, membership is restricted, thus allowing little scope for great development. The Society has too small and narrow an outlook of its duties, and is controlled mainly by the trade. I submit that the introduction of amateurs who are disinterested parties, in the management of its affairs, would be most advantageous. All other Carnation societies should be approached with a view to amalgamation so as to make one powerful organisation. I feel sure this could be accomplished, and would enable a sequence of shows to be held all the year round, at which all classes of the Dianthus family could be exhibited, thus creating and maintaining a perpetual interest. Reconstruction on these lines would mean that the management should be in the hands of men who have the necessary time to give to the welfare of the Society. A properly paid official could easily be found to carry out the clerical and organising work. Surely, with such a beautiful flower as the Carnation to deal with, a great effort should be made to further its popularity in every direction. *Walter Hyde, Sunbury.*

The Banana in Uganda.—Mr. Brown's account in the *Gard. Chron.* of December 27, is very interesting and suggestive. I understand that in the Canary Islands, Bananas are attacked by a small moth in its larval state, called Hierorestis subcervinella, whilst in the West Indies the genus Musa suffers from the depredations of a large black weevil (Cosmopolites sordidus). In Uganda, therefore, the Banana appears to be as fortunate as the natives who live on it. *C. Nicholson.*

Plants which remain Steadfast.—As no one has replied to this tentative article (*Gard. Chron.*, December 20, 1924, p. 423), may I suggest that it is just as well that such things as Salvia patens and Agathaea coelestis have not been spoilt by the improvements (?) of the plant hybridisers, whose ideas appear to run largely in the direction of producing some form of hideous monstrosity as regards shape, size, or colour. Can anything among plants be more uninspiring, for instance, than double-Daffodils, Cactus Dahlias, or Chrysanthemums the size of Cabbages and looking like the heads of very respectable mops? Since the beauty of Salvia patens and Agathaea coelestis consists in the colour of the flowers, no "improvement" is called for. *C. Nicholson.*

Brazil or Para Nuts (see p. 45).—Bertholletia excelsa, or the "Castanha" of the natives, is an extreme member of the Myrtaceae, at one time made a separate order, Lecythidaceae including Lecythis Zabucajo (Sapucaia Nut), the Cannon-Ball Tree, and several other genera. Bertholletia is a native of Guiana, Venezuela, and Brazil, where it forms a tree one hundred feet to one hundred-and-fifty feet in height, with a trunk three feet to four feet in diameter. The young fruit is four- to five-celled, each cell containing only a few ovules, but at maturity is packed with eighteen to twenty-four triangular, wrinkled seeds, which, when disturbed, cannot be replaced again. These fruits are about six inches in diameter, with a hard shell about half-an-inch thick, and a lid that opens transversely. At maturity they fall to the ground and are collected by Indians called "Castantieros," who visit the forests at the proper season, collect them in heaps, split them open with an axe, pack the seeds in baskets, and convey them down the Amazon and its tributaries to the port of Para in their canoes. Unless quite recently, the Brazil Nut Tree has never been planted, though trees are left on the ground in forest clearings for the sake of the nuts. Dr. Durham is quite correct in stating that the bark of the tree is the part used for oakum. In olden times, at least, the boatmen made new shirts from the inner bark of the tree. A young tree of the proper size was stripped of its bark to a height of eight feet to ten feet. The bark was taken to the river, laid on a stone or a log, and beaten with a stick. When free from the outer bark, the fibres were opened, a slit made for the head, two for arms, the whole folded in the middle, the sides sewed, and the shirt was complete. When old, the shirts were as soft as linen. *J. F.*

SOCIETIES.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

The Annual General Meeting of the Gardeners' Royal Benevolent Institution was held on the 29th ult., at Simpson's Restaurant, Strand. Mr. Leonard Sutton, Treasurer and Chairman of Committee, presided, and there were also present Messrs. P. G. White, P. R. Barr, A. Bullock, H. G. Cox, A. Wood, J. Hudson, H. G. Alexander, W. Wallace, A. Bedford, D. Ingamells, G. F. Tinley, J. B. Linford, R. F. Felton, W. Howe, and A. Dawkins. The whole of the proceedings passed off with very little comment and did not last long.

The Secretary, Mr. G. Ingram, read the Report of the Executive Committee for 1924, of which the following are extracts:—

Extracts from the Report.

In presenting their 86th Annual Report, together with an audited statement of receipts and expenditure for the year ending December 31, 1924, the Committee desire to express their thanks for the continued and liberal support accorded to the charity by the garden-loving public.

The 79th Annual Festival in aid of the Funds, which was held at the Guildhall on November 25 last by permission of the Corporation of the City of London, was the most memorable function in the history of the Institution. The Prince of Wales—President of the Institution, graciously presided. His Royal Highness's presence and eloquent advocacy to the claims of the Charity before a large and representative gathering, met with a generous response, the sum of nearly £9,000, from which expenses had to be deducted, being given or promised. This very gratifying result was supplemented by a warm-hearted supporter—who desires to remain anonymous, but to whom the Committee tender their most grateful thanks—by a gift of £1,000, thus bringing the Festival Fund up to approximately £10,000. The Committee desire to place on record their respectful thanks to their Royal President for his special mark of favour and support. To commemorate His Royal Highness's Presidency it is proposed to place ten candidates permanently on the Funds, in addition to fifteen other Candidates who are recommended for election this day.

It is also desired to sincerely acknowledge the gifts of flowers for the Festival and the valued services of Messrs. Wills and Segar and Mr. Harry Miles, whose artistic foliage and floral decorations at the approaches to the Guildhall and on the tables added much to the enjoyment of the evening.

During the year several of the annuitants have passed away, five of whom left widows, whose cases, being in every way deserving, have been placed on the funds for the widow's allowance in accordance with the rules. Another annuitant whose circumstances have altered has resigned his pension in favour of a needy applicant. With twenty-five Candidates in all to be placed on the funds, there will still remain twenty-one unsuccessful applicants on the waiting list, several of whom sadly need immediate assistance. Happily these poor people will receive grants from two Funds, the Victorian Era Fund and the Good Samaritan Fund, both founded for the purpose of aiding candidates awaiting election and others in temporary distress.

The Committee have also to record their respectful and grateful recognition of the continued support from Members of the Royal Family. Annual subscriptions have been received from His Majesty The King (Patron). The Prince of Wales (President), in addition to His Royal Highness's special donation at the Festival: Her Royal Highness The Princess Royal, and also a sum graciously allocated by Her Majesty Queen Alexandra from the proceeds of "Alexandra Day."

Very hearty thanks are offered to those Noblemen, Ladies and Gentlemen, who so kindly opened their beautiful grounds to the public for the benefit of the Institution, and also to the promoters and organisers of concerts and entertainments on behalf of the Funds.

The Committee have again to tender their best thanks for the continued gratuitous services of the Auditors, Messrs. George, Cobley Kay & Co. (Chartered Accountants), and they would also mention the kindness of the following lady and gentlemen for presenting one year's allowance to seven unsuccessful candidates at the last election:—The late Sir Harry J. Veitch, F.L.S., V.M.H.; Mr. Leonard Sutton, J.P., C.B.E.; Mrs. Monro; Major Monro; Mr. George Monro; Mr. Reginald Cory; and Mr. A. J. Wood. It is with much pleasure the Committee tender their most cordial thanks to the honorary officers of the several Auxiliaries, who do such valuable and successful work on behalf of the Institution.

It is with feelings of sadness and deep grief that the Committee refer to what is already well known in the horticultural world, viz.: the recent decease of their much loved friend and colleague, Sir Harry J. Veitch, who had held the office of Treasurer for forty-five years. It is not too much to say that he did more for gardeners and gardening than any man of his own or any other generation. Year in and year out during this lengthy period he worked incessantly for the welfare of our Institution. His personal efforts were ever at its disposal and his benevolence was not only lavishly bestowed on the Gardeners' Royal Benevolent Institution, but on many other charities, while his private donations were continual. No distressed horticulturist ever appealed to him in vain and his loss is deeply felt by the Committee who earnestly hope that others will emulate his fine example. Then the Committee have to record the loss of two other valued members of their Board:—Mr. Alderman Piper, of Worthing, and Mr. David Fleming, of Manchester, both of whom had rendered ungrudging services to the Institution. The Committee are glad to state that Mr. H. B. Piper has consented to fill his father's place on the Committee, and Mr. Henry Hicks that of Mr. Fleming. Further losses most regretted are the deaths of Mr. H. Morgan Veitch, Hon. Solicitor, of Messrs. H. Morgan Veitch and Bilney, who was ever ready with his gratuitous legal services; Mr. James Sweet, V.M.H., a liberal supporter for many years who generously remembered the Institution in his will; Mr. Anthony Waterer, who also bequeathed a substantial legacy; Mr. Fred Hardy, Mr. W. F. Courthope, Mr. Wallace Mackay, Hon. Secretary of the Exeter Auxiliary; and Mr. A. J. Crippin, Chairman of the Liverpool Auxiliary.

In conclusion, while again expressing heartfelt gratitude for the extraordinary help received from various sources during the past year in particular, for the maintenance of this National Horticultural Charity, the Committee feel confident in appealing for continued support so that the work may be carried on with increasing activity and benefit.

LEONARD SUTTON, *Chairman of Committee.*
GEORGE J. INGRAM, *Secretary.*

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION GENERAL FUND.

For the Year ended December 31, 1924.

RECEIPTS.	£	s.	d.	£	s.	d.
To Balance with Bankers, January 1, 1924	682	11	9			
Balance with Secretary, January, 1, 1924	8	3	3			
				690	15	0
Annual Subscriptions	985	19	0			
Donations and Legacies ..	6,470	11	0			
Schröder Annuity	20	0	0			
Dividends and Interest ..	1,046	3	6			
				8,522	13	6
				£9,213	8	6

PAYMENTS.				£	s.	d.	£	s.	d.
By Annuities and Gratuities ..							4,178	10	0
Rent, Fuel, Lighting, and Salaries of Secretary and Clerk				667	2	5			
Expenses of Annual Meeting and Election .. .				4	15	6			
Printing and Stationery ..	188	4	8						
Less Advertisements	25	11	10						
				162	12	10			
Advertising—Fry's Charities				2	12	6			
Cheque Books .. .				14	3	4			
Postages: Report, Polling Papers, Appeals and Ordinary				51	16	10			
Telephone Charges				11	17	5			
Cost of Wreaths				3	5	0			
Carriage, Telegrams, Typing, &c.				13	11	8			
							931	17	6
Balance with Bankers, December 31, 1924 ..				1,576	2	11*			
Balance on Deposit at Bankers, December 31, 1924				2,500	0	0			
Balance with Secretary, December 31, 1924				26	18	1			
							4,103	1	0
							£9,213	8	6

* £1,250 is required to meet the Quarterly payments due on December 31, 1924.

We have examined the Accounts of Receipts and Payments with the Books and Vouchers, and we certify that, to the best of our information, they are correct. We have also verified the investments and bank balances of the Institution.

(Signed) GEORGE COBLEY, KAY & CO. (Hon. Auditors)
Chartered Accountants.

29 *January*, 1925.

Mr. Ingram also submitted the balance sheet, as shown.

The Chairman, in moving the adoption of the report, stated that we were reminded as the years go by of those who have done valued work before us, and now, through the efforts of those who have taken up the reins, we were able to keep this charity before the garden-loving public. It is a report upon which the Institution is to be congratulated, and especially the success of the seventy-ninth festival dinner, which was one that all who were present at will long remember, including His Royal Highness, the Prince of Wales, to whom a very large share of the success was due. He asked the company with their permission to allow him to send the following telegram to His Royal Highness:—"Members and subscibers at the Annual Meeting and Election of the Gardeners' Royal Benevolent Institution, at Simpson's 101, Strand, desire to express to your Royal Highness their sincere gratitude and respectful appreciation of the great help afforded them in their work on behalf of distressed horticulturists which has enabled them not only to elect fifteen candidates to the benefits, but also to place ten additional candidates on the Fund in commemoration of Your Royal Highness's gracious presidency at the Festival Dinner at the Guildhall."

Continuing, he stated it was a worthy effort to collect £10,000 on behalf of distressed gardeners and their widows, and he had to thank all who helped to make the annual dinner a success, but their thanks were primarily due to the Secretary, Mr. George Ingram. Mr. Ingram and the late Sir Harry J. Veitch conceived the idea of asking His Highness to preside and although it was not done without certain difficulties the happy result was achieved, and he considered that the Committee should be empowered at that annual meeting to consider some means of giving to Mr. Ingram some tangible proof of their appreciation of his efforts. He had to express the gratitude of the Institution to members of the Royal family for their continued help, and in that connection he especially referred to the valued contribution allotted by Queen Alexandra from the proceeds of Alexandra Rose day collection.

The opening of gardens to the public in aid of the Institution was, said Mr. Sutton, a great help, not only in obtaining money, but also in making the Institution better known. The Auxiliaries, of which there were some half-dozen, were doing very good work, and some of them had assisted in this way for very many years, and he hoped that the number of Auxiliaries would be increased in the future. The Institution suffered a grievious loss during the year in the death of Sir Harry Veitch, who had occupied the post of Treasurer for very many years, and it would be a very difficult matter to find a worthy successor for the post. They had also to regret the loss of their hon. solicitor, Mr. H. Morgan Veitch, who was present at the annual meeting last year, and was always ready to help the Institution. In conclusion he thanked the members of Committee for carrying on their work so successfully

The adoption of the Report was seconded by Mr. P. G. White, and carried without further comment.

The election of officers was next proceeded with. Mr. Hudson proposed the re-election of Mr. Leonard Sutton as hon. treasurer, and stated that the Institution could not have anyone better to fill the post. This was seconded by Mr. Felton and carried unanimously, with applause. Mr. George Ingram was, on the nomination of Mr. P. R. Barr, re-elected secretary. He said that Mr. Ingram's name was well-known in the horticultural world for the valuable work he had done in connection with the Gardeners' Royal Benevolent Institution, and he ventured to state that no one could have done the work so well or so advantageously to the Institution. Mr. A. Wood, who seconded, considered that this annual meeting should be instructed to ask the committee to consider the matter of granting an honorarium to Mr. Ingram for the splendid manner in which he had carried out the arrangements of the festival dinner with such happy results, a proposal that was agreed to with applause. Mr. Ingram, in thanking the members for his re-election, stated that he would continue to do all in his power not only for the committee but for the beneficiaries of the Institution and its welfare generally.

The retiring members of committee, Messrs. Bedford, Bullock, Dye, Jennings, MacDonald, Sutton, and Wallace were re-elected, and Mr. H. Hicks and Mr. H. B. Piper elected to fill vacancies.

Messrs. Cobley, Kay and Co were re-appointed auditors and thanked for their past services.

At this stage the meeting was adjourned for the taking of the ballot, and Messrs. Ingamells, White and Cox were appointed scrutineers. Later in the afternoon the results were announced as follow:—Jane Simmons, 4,040; Emma Robinson, 4,028; Emily Martin, 4,015; George Doe, 3,603; William Manning, 3,472; Henry Southgate, 3,374; James Elliott, 3,372; W. J. Gilks, 3,308; Alfred F. Bailey, 3,261; George House, 3,225; Elizabeth Hopkins, 3,168; Frederick Willis, 3,167; Rachel Walters, 3,140; Thomas Thurgood, 3,140; Dinah Bovington, 3,034; Thomas W. R. George, 3,021; Stephen F. Collins, 2,995; Elizabeth D. Morley, 2,970; Robert Mackenzie, 2,912; Hannah Hodgson, 2,804; John Crook, 2,758; William H. Mayne, 2,619; and Samuel Pragnell, 2,314. Thomas W. R. George, Stephen F. Collins, Elizabeth D. Morley, Robert Mackenzie, Hannah Hodgson, John Crook, William H. Mayne, Samuel Pragnell, A. Ranson and H. Sale were the candidates selected to be placed permanently on the funds to commemorate the Presidency of H.R.H. the Prince of Wales.

BRITISH FLORISTS'.

The prevailing epidemic of influenza was responsible for a somewhat small attendance of members on the occasion of the annual general meeting of the British Florists' Federation, held at the Connaught Rooms, Great Queen Street, London, during the afternoon of Thursday, January 29.

Mr. W. E. Wallace presided, and those present included Mr. G. Shawyer, Mr. F. W. Ladds, Mr. W. Artindale, Mr. R. G. Piper, Mr. C. Engelmann, Mr. Milton Hutchings, Mr. W. Blackburn, Mr. H. Hannibal, Mr. H. T. Mason, Mr. L. Mills, Mr. W. Robins, Mr T. Windle, Mr. Laurence Cook, Mr. Alfred Ward, and Mr. Brooke Bray. Following the formal opening proceedings the Secretary read numerous letters from absentees, most of whom regretted their inability to attend as a consequence of illness.

The report of the Committee for the year 1924, together with the audited accounts were read, and their adoption was moved by Mr. W. E. Wallace and seconded by Mr. G. Shawyer, the latter of whom made special reference to the work of the Joint Committee on the heating of glasshouses. In the fairly lengthy report reference was made to this last-mentioned subject, which is being investigated by a Committee composed of members of the British Florists' Federation and the Lea Valley and District Nurserymen and Growers' Association, and copies of the preliminary report were on sale to members present. Continuing, the report reviewed the work of the Market Floral Committee, the International Horticultural Conference held in London in May last, and made special reference to the work of the Federation's Market Committee which deals exclusively with matters affecting Covent Garden Flower Market. The financial statement showed an expenditure of £264 13s. 6d., leaving a balance of £3 1s. 4d. to be carried forward. The Report concluded with thanks to Mr. W. E. Wallace for his presidency, to Mr. D. Ingamells, who is Chairman of Committee and also Chairman of the Market Committee; to Mr. W. Irving, Superintendent of Covent Garden Market; to Mr. Jolis for decorating the dinner tables when the foreign guests were entertained in May; to Mr. T. Windle and Mr. D. Sweet for special assistance in connection with flower market business; and to Mr. George Monro for allowing the use of his firm's salerooms for the conduct of the Market Floral Committee's business. It is of interest to observe that the Federation continues its support of the Chamber of Horticulture and has contributed thereto a sum of £20.

Thanks to the officers and committee for their work during the year were accorded on the motion of Mr. T. Windle and Mr. L. Cook. The retiring president, Mr. W. E. Wallace received quite an ovation when thanks were tendered to him on the motion of Mr. F. W. Ladds and Mr. Milton Hutchings. Mr. W. E. Wallace moved, and Mr. H. T. Mason seconded, the proposal that Mr. F. W. Ladds be president for the ensuing year. Mr. Ladds was elected unanimously, and then took charge of the meeting.

Most of the retiring members of committee were re-elected on the motion of Mr. Engelmann seconded by Mr. Robins, and Mr. T. Windle and Mr. Skene were appointed to fill vacancies, while Mr. Wallace was elected to fill the vacancy brought about by the election of Mr. Ladds to the presidency. Messrs. George Cobley, Kay and Co. were appointed hon. auditors, and thanked for their services. Mr. Shawyer referred to the excellent work done by a committee of the Farmers' Union in connection with the subject of the differential rates of wages, and he moved that the thanks of the meeting be sent to the Farmers' Union, and particularly to Mr. Roland Robbins, Mr. Guild, and the five employers' representatives who had carried out the investigation. This was seconded by Mr. Ladds, and heartily agreed to.

Tea was then served and immediately afterwards Mr. George Cobley gave an address on "Some Income Tax Difficulties." This was greatly appreciated by the members present, who subsequently joined in a brisk discussion, which, however, chiefly took the form of questions and answers. Mr. Cobley was very heartily thanked for his address.

During the evening members and friends, including numerous ladies, dined together at the Connaught Rooms under the presidency of Mr. F. W. Ladds. The tables were beautifully decorated with bowls of La Victoire Hyacinths sent by Mr. Ladds, and arranged with Snowdrops, Ivy sprays, and Willow by Mr. Harry Miles. The proceedings were thoroughly enjoyable, and there was an excellent programme of music under the direction of Mr. Ralph Norris.

Mr. T. Windle proposed "The British Florists' Federation," to which Mr. George Shawyer, one of the founders, responded. Mr. C. Englemann paid a generous tribute of regard and esteem to the retiring President, Mr. W. E. Wallace, which was thoroughly endorsed by all present. Mr. F. W. Ladds proposed "Flowers and Flower Growers," to which Mr. W. Robins, on behalf of the salesmen, and Mr. Piper, on behalf of the florists, responded. "The Ladies and Visitors" was proposed by Mr. W. Artindale in very humorous and pleasing fashion, and this was responded to by Mrs. W. E. Wallace and Mr. George Cobley. The toast of the Chairman, proposed by Mr. David Ingamells, was accorded musical honours, during which the electric lights went out. The members fell in with the humour of the situation and joined together in the semi-darkness in singing "Auld Lang Syne." At the conclusion, when light was restored, Mr. Ladds presented every lady and each of the artists with a bowl of Hyacinths, a present that was very greatly appreciated.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, January 23.—*Committee present;* The Rev. J. Crombleholme (in the chair), Messrs. A. Burns, A. Coningsby, D. A. Cowan, J. Cypher, J. Evans, A. Keeling, J. McCartney, and H. Arthur (secretary).

Awards of Merit.

Cypripedium Asion, Bolholt variety (*Queen Alexandra* × *aureum Oedippe*). From Capt. W. Horridge.

Odontoglossum Faustina (*Dora* × *eximium*); *O. The Captain*; *O. Vega* (*priam* × *Germaine Opoix*). From Mr. John Evans.

Laelio-Cattleya Frederick Boyle var. Fascinator (*C. Trianae* × *L. anceps*). From Messrs. Keeling and Sons.

Groups.

Mrs. Bruce and Miss Wrigley, Bury, (gr. Mr. A. Burns) staged a group to which a Silver-gilt Medal was awarded.

Large Silver Medals were awarded to Messrs. J. Cypher and Sons, Cheltenham, and Mr. J. Evans, Colwyn Bay, for miscellaneous groups of Orchids.

ROYAL CALEDONIAN HORTICULTURAL.

The Annual General Meeting of the above Society was held in Dowell's Rooms, George Street, Edinburgh, on January 14, Mr. R. Fife, President, in the Chair. The proceedings, which were of a purely formal nature, consisted in the election of the new office-bearers, and in the presentation of the report by the Council and the statement of the accounts for the year, both of which were agreed to. The financial statement showed a deficit on the year's working of £54 17s. 10s., which was practically accounted for by the deficit on the spring show. Mr. R. Fife was re-elected president; Mr. A. Chalmers was elected to the vacancy in the vice-presidencies; and Miss Todd and Messrs. W. Crighton, L. B. Stewart, and D. Armstrong appointed to fill vacancies on the Council.

⁂ *Owing to pressure on our space the report of the Annual Meeting of the National Chrysanthemum Society is held over until the next issue.*

Obituary.

Mr. Philip Lee-Warner.—Mr. P. Lee-Warner, who died suddenly at his house at Bletchingley on the 28th ult., had probably done more than any man of his time for fine typography and colour-printing. The well-known Medici prints originated with him, and it was entirely due to his untiring personal efforts that it became possible not only to produce such work in this country, but to rival Munich and Milan in a field in which those places had for so long been pre-eminent. Mr. Lee-Warner was a keen amateur cultivator of plants, as well as a director of the publishing house of Martin Hopkinson and Co., Ltd., a felicitous combination which gave rise to the gardening handbooks and other horticultural works recently published by that firm, and of which *Irises*, by Mr. Dykes, and *Crocuses*, by Mr. W. Bowles, have already been issued. Like many men who bring a fertile mind to the cultivation and study of plants, Mr. Lee-Warner felt the need for books which should tell the intelligent amateur sufficient to enable him to grasp the salient points of the cultivation of a particular plant or group of plants, and, like the Editor of the Present Day Gardening series of books, now unfortunately, for the most part, out of print, he realised the importance of leaving such work in the hands of men who have first-hand knowledge of the subject gained by long observation of such plants under every-day working conditions.

William Watson, V.M.H.—The sad news of the death of this distinguished gardener will be learned by horticulturists with the profoundest regret, and by none more sorrowfully than those gardeners in all parts of the British Empire who served under him at Kew and who are proud to have been associated with him in their early training in gardening. Through his long connection with Kew he was known and esteemed by gardeners of many nationalities and especially on the Continent, which he visited on several occasions. He died on the 30th ult. at a nursing home at St. Albans, following a break down in health which may be attributed mainly to over-work, for he was not equal to the strain, and heart failure caused his regrettable death. Those of us who knew him intimately have been aware for some time past that he was failing, yet the news of his death came as a great shock to us as it will to his many other friends. Although Watson had completed his life's work, mainly in the Botanic Garden with which his name will always be associated, he was only sixty-seven years of age, and those who knew him intimately looked forward to enjoying his friendship and wise counsels for many years to come, in the retirement which he had so richly earned. Those of our readers who require full details of his birth and earlier career we refer to the warm-hearted eulogy of the man written by his friend and colleague, Sir Frederick Moore, in *Gard. Chron.*, July 15, 1922. Suffice it to state that he was born at Garston in March, 1858, commenced his professional career in the propagating department of Messrs. R. P. Kerr and Sons, Liverpool, and gained subsequent experience at Messrs. Davis and Sons, Messrs. C. Pennell and Sons and Messrs. Hugh Low and Co. before he entered in July, 1879, the gardens at Kew. He was promoted to assistant Curator in 1886 and on July 1, 1901, on the retirement of Mr. George Nicholson, became Curator, a position which, as Sir Frederick Moore states, he occupied with credit to himself and benefit to Kew, until May 31, 1922. Few gardeners have possessed a more striking personality than Mr. William Watson and few have excelled him in the craft with which he was so long and honourably associated. His knowledge of plants was probably unrivalled and he has been often referred to as one of the finest plantsmen in Europe. His taste in plants was catholic, but probably he was the greatest authority on indoor plants and rare exotics generally; his wide knowledge of plants was well exemplified in the extensive notes which he contributed, mainly to this Journal, on plants in cultivation at Kew. His opinion was always reliable and the several works on gardening which he has published are all stamped with a note of authority and first hand knowledge of the subject. He was author of *Orchids, their Culture and Management*, *Cactus Culture for Amateurs*, *Climbing Plants*, and *Rhododendrons and Azaleas*, and he was recently engaged in editing a new edition of *Thompson's Gardeners' Assistant*. In view of the modern interest and importance which Rhododendrons have attained in gardens it is interesting to record that many years ago William Watson took the keenest interest in these beautiful flowering shrubs and trees, and no one knew them better than he did; it was the same with everything with which he concerned himself for he mastered the fullest details and his opinion was always reliable. Of his unbounded enthusiasm and interest in all things pertaining to gardens and gardeners, those of us who knew him during the time when he was chairman of the Kew Mutual Improvement Society can well testify, and his concern in the welfare of gardeners was equal to his interest in the subjects they cultivated. For this reason he helped to institute the British Gardeners' Association, and it is to the credit of the man that he risked his position at Kew in his determination to help carry the scheme through. He was one of the founders of the Kew Guild and for many years took a most active part in the proceedings of this Association of Kew men. He was elected a member of the Victoria Medal of Honour in January, 1917, and some years before that he was made an Associate of the Linnean Society. Those who attended his funeral in the Church of St. Paul's at St. Albans on Monday last, including Dr. Hill, the Director of Kew, Mr. W. Bean, the Curator, and Messrs. Raffill, Coutts, and Taylor of Kew, his old friend Mr. John Weathers, Mr. G. F. Tinley (*Gardeners' Chronicle*), and Mr. C. Engelmann, with Mr. Collins, Superintendent of the St. Albans Park, and Mr. Cooper of Messrs. Sander, both of whom served under Mr. Watson at Kew, realised that they had lost a valued friend and one whose loving nature and kindly disposition had endeared him to all who knew him. His remains were laid reverently to rest in St. Albans Cemetery within view of his son-in-law's nursery (Messrs. Sanders), by the Superintendent, Mr. J. Clark, who had been associated with him at Kew for very many years and who, as an old pupil, may be trusted to see that this sacred spot suffers no neglect.

THE LATE W. WATSON.

TRADE NOTE.

Mr. Frank Ladds and his sister Mrs. Edwards, of the firm of Philip Ladds, Swanley, thoroughly appreciated the advantages attaching to goodwill between employees and employers and are ever ready to show their own appreciation of good work done on their behalf. Towards the end of January they entertained their employees from the Swanley Junction, Swanley, Bexley Heath, and Moepham nurseries, and the staff at York Street, Covent Garden, at the Club Hall, Swanley. An excellent programme of music followed the equally excellent dinner, and everyone present had a most enjoyable time. During the interval Mr. Frank Ladds proposed the health of the employees, and to this toast Mr. George Puplett and Mr. Jack Pearson responded. In recognition of his forty-two years service, Mr. Puplett was presented with a handsome clock, and Mr. Jack Pearson, who has been thirty-two years with the firm, received a suitably engraved gold watch. Miss Wood received a gold wristlet watch while other employees received tangible evidence of the esteem in which they are held by their employers.

ANSWERS TO CORRESPONDENTS.

Crushed Egg-shells in place of Lime.—For mixing with the potting material for perpetual-flowering Carnations the best form of lime is old-mortar rubble, crushed small. Egg-shells and oyster-shells provide some amount of lime, but some time elapses before they are reduced to a readily useful condition.

Loose Bark on Vines: *Henriquez.* Those who remove the outer bark from vines should do so so soon as pruning is finished. It must be remembered that there are functions carried on in the inner bark which are necessary for the plants existence, and the outer bark is there for the purpose of protecting the tissues concerned. Loose bark may be removed, but only such as is quite loose, as it indicates that a new layer has been formed below. When the vines have been attacked by insects or mildew they should be painted so soon as possible after pruning, with a mixture of soft soap and flowers of sulphur; half-a-pound of common soft soap (not the refined article) to a gallon of water with as much sulphur as will form a thick paint. In bad cases it may be advisable to repeat the operation within a week, adding a little soot to colour the mixture and prevent any portion of wood being missed. It is especially important to paint the buds, but without applying any pressure.

Names of Plants: *G. W. H.* 1, Abies nobilis; 2, Too small to identify; 3, Berberis Darwinii var. nana; 4, Cupressus Lawsoniana var. lutea; 5, Taxus brevifolia; 6, Cephalotaxus drupacea; 7, Thuya plicata var. zebrina; 8, Cupressus sempervirens; 9, Juniperus chinensis; 10, Cupressus Lawsoniana var. erecta; 11, C. L. var. argentea; 12, C. L. var. Westermannii; 13, C. Lawsoniana.

Communications Received.—C. E.—J. O'B.—W. K.—R. S.—F. H. C.—Lonicera—J. P.—C. H. C., New Zealand—G. D.—W. A.—M. M.—T. E. T.

CATALOGUES RECEIVED.

William Wood and Son, Ltd., Taplow, Bucks.—Horticultural sundries.

Websters's Patents Co., Witheridge, N. Devon.—Labels, "Cascade" nozzle.

Barr and Sons, 11, King Street, Covent Garden, W.C. 2.—Bulbs and tubers.

James Vert and Sons, Saffron Walden.—Seeds.

Foreign.

Fr. de Laet, Contich-Village-lez-Anvers, Belgium.—Cacti

L. Ferard, 20, Rue de la Pepiniere, Paris.—Plants, and Seeds.

Louis Gauthier, Caen, Calvados, France.—Strawberries.

H. Correvon, Floraire Nursery, Chene-Bourg, near Geneva, Switzerland.—Seeds.

Vilmorin-Andrieux and Cie, 4, Quai de La Megisserie, Paris.—Seeds.

John B. Vandershoot, Hillegom, Holland.—Bulbs, Roses, plants.

Conyers B. Fleu, Junr., Germanstown, Philadelphia, Pa., U.S.A.—Trees.

Henry A. Dreer, 1306, Spring Garden Street, Philadelphia, U.S.A.—Seeds.

Dumetz, Brocco and Guiheneuf, 129, Faubourg Saint-Denis, Paris.—Lilium candidum. (Wholesale).

Wilhelm Pfitzer, Stuttgart, Germany.—Seeds.

O. M. Pudar, Puyallup, Washington, U.S.A.—Irises.

GARDENING APPOINTMENTS.

Mr. F. M. Wakefield, previously for two-and-a-half years gardener to Sir Heath Harrison, as Inside, Foreman to Sir Rupert Clarke, Brockwood Park, Alnesford.

Mr. Howard Grace, for the past two-and-a-half years Gardener to Sir Edward Mountain, Bt., Norbury Park, Dorking, and previously Gardener to J. D. Willis, Esq., Bapton Manor, Codford, Wiltshire, as Gardener to the Rt.-Hon. Earl Temple, Newton Park, near Bristol.

THE
Gardeners' Chronicle

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Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 39·6.

Actual Temperature—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, February 11, 10 a.m.: Bar. 29·5, temp. 50°. Weather, Dull.

The Royal Horticultural Society's Annual Report.

The *Report* of the Council and the Wisley Report for 1924, though brief, contains many items of interest. Although not included therein the announcement of the official nomination of Messrs. T. Hay and G. W. Leak to seats on the Council will be received with pleasure by friends of the Royal Horticultural Society and of these distinguished horticulturists. Both of the nominees may be relied upon to do valuable work for the Society and for horticulture in general. The list of nominations of vice-presidents contains also names which are honoured by all horticulturists and we congratulate the Council on conferring this honour on the Hon. Vicary Gibbs, who has, by his example, done so much to promote the cultivation of trees and shrubs. With so many distinguished women horticulturists we would suggest that the time has come when a similar honour might be conferred on one or more of their representatives. One name of those nominated as vice-presidents—that of Lord Grenfell—will evoke memories of a fine soldier and a great gentleman who all his life put country before self and whose recent death is a heavy loss not only to the Society but to the country at large. As is but natural the *Report* lays stress on the progress which is being made toward the planning of the new Hall; as the Council rightly observes the need for increased show accommodation is certainly great, and all will hope that it may before long be met. The extension of the Chelsea Show to five days is, we think, a somewhat hazardous experiment, but nevertheless one which is worth trying, though what exhibitors of rare and delicate Orchids will say to the project perhaps is better imagined than printed. A spell of hot weather at the time of the show—and such a contingency must be contemplated—would, we fear, prove a severe trial to not a few of the exhibits. Among those who have received awards at the hands of the Society we note with special pleasure the name of Monsieur Correvon—a good friend of this country and an enthusiastic connoisseur of alpine flowers—and Professor Sargent, who by his great and devoted work has made the Arnold Arboretum famous among the gardens of the world. The Wisley Report gives the many activities for which the garden staff is responsible. Perhaps the most interesting item is that relating to the fruit-testing station at which there are already three hundred and thirty-two varieties of Apples, one hundred and forty-three of Pears, one hundred and twenty-two Plums and Damsons, and representative varieties of other fruits. The station is bound to grow in interest year by year, and when varieties tested there have been distributed to the sub-stations to be established by the Ministry of Agriculture, fruit growers will have a wonderful opportunity for studying the suitability of varieties to different types of soil and climate. There was in progress at the time of the issue of the last *Report*—and possibly before—an enquiry into the best uses to which the scientific resources of Wisley might be put. Mr. Cuthbertson stated at the Annual Meeting the decision of the Council in this respect, and that it was intended to have a head of the laboratory, but that the R.H.S. will be a little less ambitious in its scientific aims than the 1914 programme. Yet Wisley is unique in the opportunity which it offers for the study of those long distance problems which vex the minds of scientific horticulturists. The problems are many. Their solution would redound to the credit of the Society and would advance not only the science but also the practice of horticulture. Why tarry the wheels of their chariots? Lastly, we observe once again a reference for the need for a hostel for students. Until the hostel is furnished, Wisley can never come into its own as a great teaching centre. Building is costly it is true, but the resources of the Society are great, and to no better purpose might these resources be put than in providing living accommodation for students.

London Daffodil Show.—The schedule of the Royal Horticultural Society's Daffodil Show to be held at Vincent Square, Westminster, on April 15 and 16, has been published, and may be obtained on application to the Secretary of the Royal Horticultural Society. Seventy-three classes are provided, and we are pleased to notice that provision is made for the display of bowls and baskets of Daffodils to show the decorative character of these flowers. The market section remains and should prove of considerable interest to those who have to pack and dispatch flowers over long distances. There is also a novice class for the encouragement of those raisers of Daffodils who have not hitherto won a prize at Westminster.

"Daily Telegraph" Gardens Competition.—The *Daily Telegraph* is again offering prizes for the best gardens situated in the London postal district. There are four classes; in two classes a first prize of £100, a second of £40, a third of £15 and a fourth of £10 are offered, while in the other two classes, the first prize in each case is £25, second prize, £10 and the third prize, £5, with an additional fourth prize in the class for gardens of houses of rateable value not exceeding £35 per annum and of a size limited to four hundred square yards. Full particulars of the competition may be had from the Gardening Editor, Daily Telegraph, Fleet Street, London, E.C.4.

Heller Prize for Dahlias in America.—Dahlia growers throughout the United States are taking a keen interest in the Heller prize for Dahlias which is to be competed for during this year. A bequest of $5,000 was left to the University of California by Mr. Samuel W. Heller in memory of his father, and each year the interest from this sum is to be awarded to a different Dahlia grower. In 1925 the award is to be made to a Dahlia of "pre-eminent" merit shown at the exhibition of the Dahlia Society of California.

Presentation to Mr. S. W. Tucker.—An interesting presentation has been made to Mr. S. W. Tucker, gardener to the Earl of Radnor at Longford Castle. This took the form of an Aladdin Lamp subscribed to by every member of the garden and estate staffs, and the occasion was Mr. Tucker's recent marriage. The presentation ceremony was a very pleasant one and both Mr. and Mrs. Tucker were surprised and highly gratified by the good wishes expressed and by the handsome present which accompanied them

Royal Horticultural Society of Aberdeen.—The Aberdeen Town Council has granted the request of this Society for the exclusive use, for three days, August 13, 14, and 15, of some fifteen acres of Hazelhead, the most recently acquired city estate, for the purpose of holding the annual flower show. This area is only about one-sixtieth part of the estate, but, nevertheless, there has been a little sore feeling engendered over the transaction, the contention being that it is unfair to hand over the exclusive use of the most beautiful part of the policies of this fine city space during one of the most popular months of the year. Be that as it may, the city fathers decided by twenty votes to fourteen to grant the society's request.

New President of the Royal Scottish Arboricultural Society.—Great satisfaction is being expressed in northern forestry circles, and especially among the members of the Aberdeen, Banff, and Kincardineshire's branch, of which he is a member and has been chairman for a number of years, over the appointment of Sir John R. Gladstone, Bt., of Fasque and Balfour, Kincardineshire, as supreme head of the Royal Scottish Arboricultural Society. It is a well-deserved honour and a fitting reward for the long and splendid service and encouragement Sir John has given to the cause of forestry in Scotland. As the owner of large and important woodlands (a most necessary qualification for such a post), the new president has taken a very keen interest, both scientifically and practically, in forestry matters. In returning thanks to his proposer, and retiring president, the Earl of Moray, also a member of the northern branch, and who has done yeoman service for the society, Sir John said that if they expected eloquent speeches from him they would be disappointed. Despite the name he bore—readers will appreciate the humour of this point when it is remembered that Sir John is a nephew of the great Victorian statesman—William Ewart Gladstone—who, whatever his faults, did not lack, as Scots people say, "the gift o' the gab"—none of the speaking talent had come his way, but he hoped to make up for that by attending to the practical business of the Society. In his audience of tree experts he thought he could claim to love trees as much as anybody. A splendid old tree was to him one of the finest things in nature, and to watch flourishing young plantations growing was of endless interest if the right trees were planted in the right place. He regarded his appointment as a compliment to the Aberdeen branch of the society. Mr. John Michie, M.V.O., late factor to the King at Balmoral, and where. previous to his appointment as factor, he was for many years head forester, voiced the opinions of northern members when he expressed the pride and pleasure they all felt at Sir John's appointment. Capital work has been done by the Forestry Commission during the past five years north of the Tweed, about 18,000 acres having been put under trees, and it hoped by the end of this month some 4,500 acres will be added to that area. Of course, there is much yet to be done, and no better nor more qualified head could have been chosen to lead in the good cause than Sir John R. Gladstone.

Royal Gardeners' Orphan Fund.—The Annual Meeting of the Royal Gardeners' Orphan Fund was held on Wednesday last, at Simpson's Restaurant, Strand. The Report of the Executive Committee showed that the Fund had enjoyed a prosperous year in 1924. The total receipts, including legacies of £1000, £90 and £25 respectively, amounted to £3,768 12s. 2d. Mr. A. B. Bartlett was appointed Secretary in place of the late Mr. Brian Wynne. Ten orphans were elected to the benefits of the Fund. We hope to publish a detailed report of the proceedings in our next issue.

Sycopsis sinensis.—Flowering sprays of this comparatively new Chinese shrub are sent us by Mr. W. H. Honess, Walhampton Gardens, Lymington, Hampshire, who states that the plants there are thickly set with flowers this season and that the blossoms are interesting because of their unusual colouring, a pleasing shade of orange, the decorative part being the clusters of stamens. This Sycopsis is a welcome addition to the restricted list of shrubby species which bloom in winter, and the plant has the additional merit of being evergreen, for which reason it is even more valuable in the garden than such winter-blooming shrubs as Hamamelis and Forsythia, which expand their flowers whilst the shoots are naked of foliage. The species is a native of central China, where it is found at an altitude of four thousand feet. It was introduced by Mr. E. H. Wilson when plant collecting on behalf of Messrs. James Veitch and Sons in 1901. Mr. Bean states in *Trees and Shrubs hardy in the British Isles*, that the plant is perfectly hardy at Kew, and in its neat habit and distinct appearance, combined with its evergreen nature, is a welcome addition to gardens. In its native habitat it forms an evergreen bushy shrub or small tree some twenty feet high, and it is easily increased by means of cuttings made of fairly well-ripened wood rooted in heat.

Ideal Home Exhibition.—The ninth Ideal Home Exhibition to be held at Olympia from March 2 to March 25, will include a large horticultural section as on previous occasions. We understand the great annexe will contain twelve differently designed gardens, laid out and planted by prominent horticultural firms, and there will also be a Japanese tea garden where refreshments will be served.

Dr. William B. Brierley.—One reason why Dr. W. B. Brierley is held in high estimation among horticulturists is that he has interested himself in growing-crops and not confined his attention to plants tested in the laboratory. He is a widely-travelled man, and one who has made himself acquainted with cereal and vegetable crops and their enemies in Canada, the United States, and many other countries besides our own. He is familiar with such economic crops as Rice, Cotton, Sugar Cane, and Citrus fruits, having studied them in the countries where they are of great importance. His travels include visits to the Rocky Mountains, the deserts of Colorado and Arizona and the swamps of Louisiana and Florida, for Dr. Brierley is a botanist in the general sense as well as a mycologist. Following his education at Manchester University he carried out research work in the Imperial College of Science, London. Later, he became lecturer in botany at the Manchester University, and in 1914 was appointed First-Grade Assistant in the Pathological Laboratory at the Royal Gardens, Kew. During the war he served in the Artists' Rifles, and in 1919, when the Institute of Plant Pathology was founded at Rothamsted Experimental Station, he was appointed head of the Department of Mycology. At Rothamsted he designed and equipped the new mycological laboratories, which are said to be the finest in the British Empire, and he received many congratulations when these were occupied in October, 1924. In 1920, Dr. Brierley attended the International Conference of Plant Pathologists held in Virginia, U.S.A., and afterwards visited the principal educational and research centres in Canada and the United States. The excellent work he has done includes original research on the diseases of Lavender, Horse Chestnut, Potato, etc., and such fundamental problems as hereditary changes in parasitic fungi and the nature of species. For many years he was Honorary General Secretary of the Association of Economic Biologists, and during his period of office this body became one of the leading and most active of scientific societies. He is keenly interested in general education, and for several years conducted tutorial courses in biology for the Workers' Educational Association and Central Extension Courses at Gresham College and elsewhere for the London University. Dr. Brierley is an anthropologist of considerable eminence, and was for some time an extension lecturer on anthropological subjects for the University of London. He is a member of many British and foreign scientific societies, including the American Phytopathological Society, and an active member of many technical committees set up by the Ministry of Agriculture and the Department of Scientific and Industrial Research. Meanwhile, he keeps closely in touch with practical field and garden problems, and in this connection he is well known to various growers' associations and branches of the National Farmers' Union, whose members he has frequently addressed on plant-disease problems and the relation of scientific research to agricultural and horticultural practice.

DR. W. B. BRIERLEY.

Methods of Restoring Faded Writing.—The fading of names on labels attached to plants is always a source of vexation to keen gardeners, and the following methods for the restitution of faded writing, published in the *Pharmaceutical Journal and Pharmacist* for January 24, may be of interest to our readers. Inks most favourable to restoration after fading are those made with an iron basis; such inks may be rendered legible by treatment with tannin, ammonium sulphide, potassium ferro- or ferri-cyanide, ammonium sulphocyanide, or sodium salicylate. If the writing on the label is to be made legible, it is essential that the paper be dry, and the best method of doing this is to place it between two sheets of clean writing paper and press a flat iron over it heated to 100° to 105°. This alone will sometimes bring the writing out again, but if it does not, the label should be exposed to sunlight, which has the effect of darkening some inks. Failing this, one of the solutions given above should be carefully applied with a brush, and when this is dry the paper should be treated again with a hot iron. The writer states that if the iron of the ink is in the ferrous state it will be necessary to treat the paper by exposure to the vapour of hydrochloric acid before applying the solution.

Tunbridge Wells Flower Show.—The Committee of the Tunbridge Wells Horticultural Society has altered the date of its flower show from July 14 and 15 to June 30 and July 1. It appears that on the date originally fixed several other important functions would have clashed with the flower show.

Street Trees in Paris.—The February number of our interesting French contemporary, *Jardinage*, contains an informative article on the subject of the trees used in the streets of Paris, which add so much to the beauties and amenities of that city. In view of the extreme, though short-lived, beauty of the Horse-Chestnut, it is sad to learn that, in consequence of persistent premature defoliation, this tree is being gradually ousted, and its place taken by the hardier Plane, Elm, Pterocarya, Sophora, and Lime. In planting, the usual practice is to make a continuous trench where the trees are not very far apart, but where this is not practicable, to allow each tree a ground-plot of at least nine or ten cubic feet. The space left between one tree and the next varies, naturally, according to the spread of the trees when full grown. The problem of watering is one of the most important during the summer months, and it is usually found necessary to water the trees from March to September. Young trees are watered both at the roots and overhead, the washing of the leaves being found very beneficial and conducive to long and healthy life. For the older trees, where conditions make it possible, an installation of pipes is employed whereby opening a stop-cock at each end of the pipe, a smaller outlet pipe, adjacent to the roots of each tree, waters a whole row with the minimum of labour and trouble. Another problem is that of the protection of the square of open ground round each tree from the trampling of passers-by and from pollution. Hitherto cast-iron grilles have been used, but these have been found very brittle and are being gradually replaced by steel or ferro-concrete. They are of the utmost importance to the well-being of the tree, as they admit of the partial aeration of the soil, which, however, even in the best of circumstances, tends to become sour. Experiments are now being made with different fertilisers to combat this tendency. As regards the mortality of the different trees, it is remarkable that, in spite of its premature shedding of the leaves, the Horse-Chestnut holds the record for longevity with the very respectable figure of a hundred and fifteen years. In Paris, as in all large cities, the street trees labour under many disadvantages, including sour soil, factory fumes, escaping gases from motor cars, constant vibration from the heavy traffic; in fact, all the ills from which our own street trees suffer except the particular London brand of fog.

Appointments for the Ensuing Week.—Tuesday, February 17: Winchester Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting. Wednesday, February 18: Glasgow and West of Scotland Horticultural Society's lecture. Friday, February 20: Manchester and North of England Orchid Society's meeting. Saturday, February 21: Leeds and District Market Gardeners' Association's dinner, Rhubarb show and smoking concert at the Griffen Hotel, Leeds.

"Gardeners' Chronicle" Seventy-five Years Ago.—*On the use of Ammonia in Plant Houses.*—You well remark (p. 83): "That it is strange that an agent so simple, so easily procured, and applied, as ammonia, should be so sparingly applied—at least, in a proper manner." Few gardeners who have observed the extraordinary luxuriance exhibited by plants grown in brick pits, heated, and having a regulated supply of this powerful agent in a gaseous form, from "linings" of fermenting horse-dung, will be inclined to doubt its value or hesitate to adopt its use in plant houses when obtained from the more elegant and less bulky, but not less effectual, form of the "carbonate." And as many of your readers will, doubtless, in the coming season be anxious to test its efficacy, they will find the necessity—whether using the more homely linings, or the salt—of bearing in mind the concluding words of your article on this subject, "that this most advantageous process requires to be conducted with judgment and caution." I have used the carbonate occasionally last season with benefit by applying a small lump of it, moistened, in the way you direct, to the hot pipes; or sometimes I dissolved a small quantity in water, and with it, from a fine rose or the engine, sprinkled the hot pipes and boiler, thereby filling the house with vapour holding the ammonia in solution, which, when condensation took place, conveyed it to the plants somewhat after Nature's own way. While on this subject, I may observe that of late ammoniacal gas has been used as "more effective, easier of application than tobacco or other established remedies" for the destruction of the insects that infest plants, and some of your readers may be inclined to try it. I would in this case, even more than the other, urge the caution you recommend, and not until practised in its application, try it, unless on individual, and not the most valuable plants. I have seen specimens subjected to its influence for a very short time, nearly done for. It may, if properly understood and managed, be very effectual, and I know it to be so; but it is "a process that requires to be conducted with judgment and caution"; and in the absence of these I would strongly recommend this "counterblast" to be avoided, and the innocuous but effectual fumes of tobacco only employed to destroy the tiny plant suckers. *A. B., Gard. Chron., February* 16, 1850.

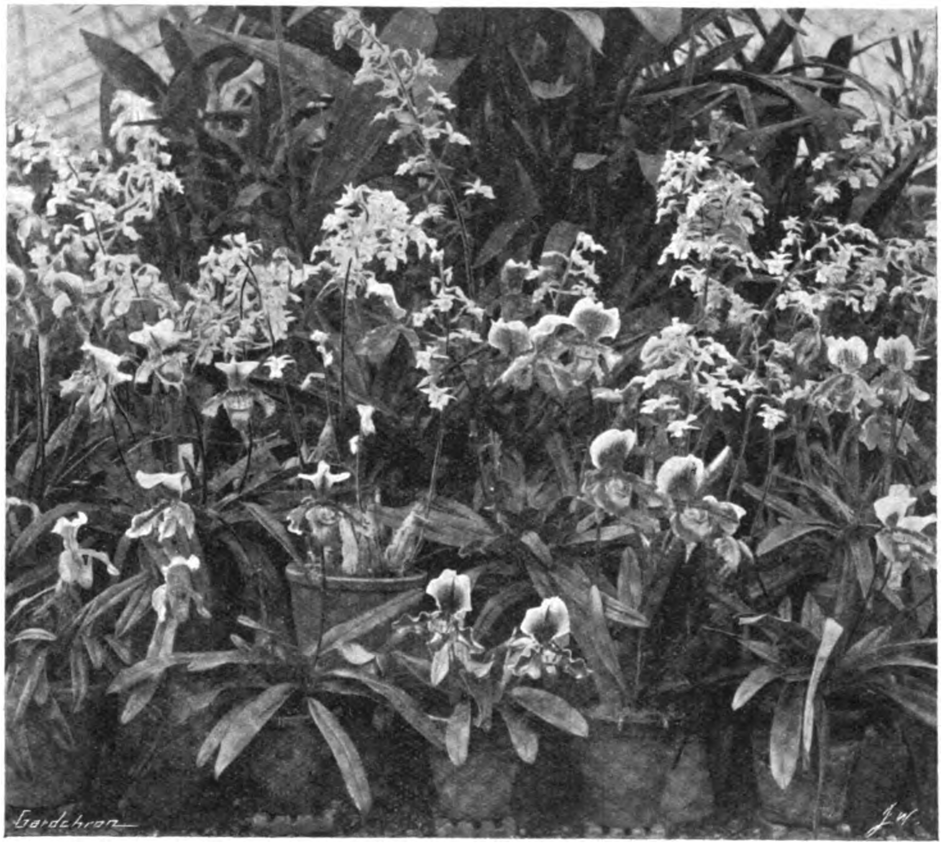

FIG. 41.—CYPRIPEDIUMS AND CALANTHES AT GLASNEVIN (see p. 111).

INDOOR PLANTS.

THE TUBEROSE.

THE Tuberose, Polianthes tuberosa is, owing to its delightful fragrance and the beauty of its flowers, one of the most popular of cultivated plants. According to Miller it was first introduced to this country "from Genoa by the persons who import Orange trees," introduced Orange trees being important articles of commerce in the early days of the English greenhouse.

Some doubt will always exist as to the origin of the word Tuberose; it is generally accepted as designating a tubular Rose, but it must be admitted that neither the plant nor flower bears the slightest resemblance to the Rose, nor is the fragrance at all similar. It is probable that the French way of spelling the name is the proper one, i.e., *tubereuse* which signifies tuberous and is in unison with the correct description of the plant.

The cultivation of the Tuberose presents no difficulties when a few details, essential to the plant's well-being, are understood. The chief points are to select strong bulbs, to guard against keeping them excessively moist during the early stages of growth and not to force them too hard. The details are much the same, whether the bulbs are started late in the year for autumn and winter flowering, or in spring, but naturally those potted in the spring may be subjected to higher temperatures than those which have to make their growth during the short days of autumn and winter.

Previous to the bulbs being potted they should be assorted into two sizes, the larger ones being potted singly in 60 sized pots and shifted into five-inch pots when more space is required, the others placed three in a six-inch pot in which they may be allowed to flower.

A mixture of two parts heavy loam to one part of well-rotted manure and a sprinkling of sand constitutes an excellent compost for the plants, and the material should be used in a moderately moist condition so that there is no necessity for watering until growth commences. It is a good rule to apply no water until the bulbs have begun to make new growth and then to water the soil very sparingly until considerable progress has been made.

As the plants are potted place them in a cool pit or house for a few weeks until the bulbs have made roots.

They may then be removed in batches to a glass-house in which a temperature ranging from 60° to 65° is maintained. If a batch is wanted in flower early and a hot-bed is available, plunge the pots to one-half or two-thirds of their depth according to the heat of the bed. It is not necessary that Tuberoses should be grown very near to the roof-glass, but from the time the leaves begin to make their appearance they need a light position to ensure compact growth. Rather liberal supplies of water will be required when the pots are well filled with roots, and as the flower-spikes develop material assistance will be derived from occasional applications of liquid manure. The water supply, however, should never be in excess of the plant's requirements, especially in the case of those grown in a comparatively low temperature with a view to the production of flowers late in the season. Overwatered plants almost invariably decay at the collar and fail to finish their flower spikes. It may be mentioned as a point of some importance that, although hard forcing is not desirable, a fairly high temperature is essential when the plants are coming into bloom, for the flowers will not expand freely nor the fragrance develop satisfactorily in a temperature below 60° to 65°.

Although the Tuberose is considered too tender to succeed out-of-doors, it is, never-the-less, somewhat hardy and far more enduring than is generally supposed to be the case. *W. Auton.*

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Management of the Houses.—The worst of the dull period of winter is passing and the amount of sunshine will be appreciably increasing daily, with a consequent rise in the temperature of the houses during the middle of the day. These conditions will greatly benefit the occupants of the various divisions and gradually encourage their activity in the development of flowers and new growth. The plants, however, should not be unduly excited into growth by an increase of artificial heat and excessive moisture; everything in this direction should be done gradually, or the results will be far from satisfactory. During periods of clear, bright weather, especially after frosty nights, it is advisable to distribute a more liberal supply of water on the stages, floors, and paths to counteract the dryness caused by fire-heat in maintaining the requisite temperature. Discretion is necessary with regard to ventilation of the houses; guard against draughts, for bright sunshine is often accompanied by cold winds.

Re-potting.—The potting of Orchids should generally commence about this period, although in large, miscellaneous collections there is always some work to be done. On the way in which this operation is performed will depend, in a great measure, the future health of the plant. The best time to re-pot is when new growths and roots are developing, the latter from the bases of the last made pseudo-bulbs. The provision for drainage should be such that the material or compost will remain sweet and porous, and, therefore, not liable to become waterlogged and sour. In potting the plants, work the materials carefully between the roots, making sure that these are not cramped together in one place, but distributed regularly about the receptacle. The plants should be fixed in the pots where necessary by securing them to neat sticks, or, in the case of pots or baskets with handles, by tying them to the wire suspenders. The length of time that the compost of a newly-potted plant will last in a sweet, healthy condition depends greatly on the method of watering adopted, together with perfect drainage and the quality of the compost used. Care must be taken not to saturate the new soil immediately after re-potting. Frequent gentle sprayings with clear water over the surface until the plant becomes re-established will usually suffice to prevent shrivelling of the peudo-bulbs and loss of foliage.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Border Carnations. — Where circumstances compel growers to winter their border Carnations in frames the plants should be examined on frequent occasions, and be kept free from any decaying foliage. An abundance of fresh air should be admitted to the frames on all favourable occasions, and water should be given the plants sparingly. If slugs are troublesome this pest may be checked by dusting the surface of the soil in the pots with soot. Plants which were planted in beds or borders in the autumn should be examined, and if they have become loosened the soil should be pressed firmly around them and the surface pricked over to promote aëration of the ground.

Box Edgings.—Live edgings may be more or less objectionable on account of their harbouring vermin, but dwarf Box may be kept within such small limits that it affords little shelter to anything harmful to vegetation. The present is a good time to undertake the re-laying of any portions of the Box edging which have become too large or have made unsatisfactory growth. If sickly growth has been caused by poorness or sourness of the ground the old soil should be removed and good loam substituted before replanting. Break the old plants into small portions with roots attached and plant the portions at a uniform height of two or three inches above the ground level. Make them thoroughly firm on filling in the soil and trim the plant neatly on completing the work.

Root Cuttings.—Propagation by means of root-cuttings is an excellent method of increasing many good border plants. Although for some of these it is preferable to do this work in the autumn, where it is wished to increase the stock of particular varieties, root-cuttings may be inserted so late as early February with successful results. Anchusa, Bocconia, Crambe, Dictamnus, Oriental Poppy, Sea Lavender, Monkshood, Phlox and Paeony are all easily propagated by this method. The roots should be cut into pieces two or three inches long, inserted firmly in pots of light soil and placed in a frame until growth has developed. In light, sandy soils these cuttsings may be inserted in nursery rows out-of-doors and for the maintenance of young stocks of plants the method is much to be recommended.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Cherries.—The first batch of pot Cherries should now be brought into a cool house ready for starting into growth. Examine the drainage and make sure no worms are present. Lightly prick over the surface soil, stand the pots on bricks on a gravel floor, fumigate the house, and keep the temperature as low as possible, but excluding frost. Cherries are very impatient of fire-heat and resent hard forcing. The following are the best varieties:—Early Rivers, Guigne d'Annonay, earliest; May Duke, Bigarreau de Schreken, Napoleon Bigarreau, white, Governor Wood, and Frogmore.

Peaches and Nectarines.—Bring into the fruit-house another batch of Peaches and Nectarines to succeed the earliest trees. The trees in the early house will now need daily attention in disbudding; remove the badly-placed shoots first, leaving the basal shoot for future bearing and the leading shoot for extension; also, if more space is to be covered, retain the best-placed shoot near the centre of each shoot, bearing in mind that these shoots will be the fruiting ones for next season. Where the fruits have set very thickly the first thinning should take place, removing all badly-placed fruits and leaving only one at each station, eventually allowing one fruit to each square foot of the tree. Keep a very sharp watch for aphis, which would cause the young leaves to curl; slightly fumigating the house is the best remedy, making sure that the foliage is dry and the temperature somewhat low. The right temperature should be 50°, with a rise of 10° during the day. Spray the trees at 7.30 a.m. and again at 2 p.m. during fine weather, also damp the floors several times during the day. Examine the borders for water, thoroughly soaking them with tepid water when necessary, and carefully preventing cold draughts when ventilating the house.

Melons. The young plants will now require to be transferred to 5-inch or 6-inch pots, using a warm compost of sandy loam with the addition of a little finely crushed mortar rubble and a dash of soot. Stake each plant, securing it with a loose tie, and grow the seedling near the roof-glass in a temperature of 70° at night. No air should be admitted however bright the sun. On very cold nights, place mats over the outside of the house for protection. This will obviate the use of much fire heat. The hot-beds should be made ready for the final planting, as young Melons root very quickly. Make the fermenting materials as firm as possible.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Greenhouse Climbers. All necessary pruning of these should be completed this month, and those plants which are being grown in permanent beds should be given a top-dressing of peaty soil. The beautiful Bougainvillea glabra is eminently suited as a roof climber either for lofty houses or for those of ordinary dimensions. The training should be directed towards the provision of a few main branches, thinly dispersed about the roof or wall which it is intended the plant shall cover, and, at the annual pruning, the lateral growths from these branches should be spurred back closely, the flowers and the beautiful rosy-mauve bracts being produced on the growths of the current year.

Cobaea scandens.—This old plant often receives the condemnation of gardeners owing to its propensity to harbour mealy bug. Except for this baneful habit, it is an admirable roof climber and one of rapid growth. Where, however, it is grown and treated as an annual, the grower need have no misgivings on the score of cleanliness. Seeds sown now in light soil and placed in warmth will soon germinate, and if grown on in pots, without checks, the plants will cover a considerable amount of space before the end of the summer

Gloxinias.—Old Gloxinia plants which were stored last autumn should now be turned out of the old soil and started into growth. The tubers may be put closely together in shallow boxes containing leaf-mould and sharp silver sand and be placed in a warm greenhouse to start them into growth. The first potting should be undertaken so soon as new roots have taken hold of the leaf-mould, when they may be potted either in small pots, afterwards transferring them to larger ones, or be placed direct into their flowering pots. The grower of the finest Gloxinias I have ever seen invariably adopts this last-named method. The use of well-drained pots, an open and fibrous compost, and an intelligent and careful handling of the water pot are the obvious conditions of treatment which this plants calls for.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Black Currants.—These small fruits should receive attention. Remove branches that cross others and cut out the old shoots, leaving sufficient of the young growths for fruiting this coming season, but not overcrowded. If big-bud is prevalent hand pick the bushes carefully and burn all the affected buds. Before they flower spray the bushes with Quassia extract, and again, after the fruit is harvested, with nicotine soap at the same strength as advised by the makers. Big-bud and reversion have been most troublesome on Black Currants of late years. I find the best thing to do is to propagate fresh stock annually, or procure clean bushes from a reliable source. The Black Currant is easily propagated, and by raising healthy stock both big-bud and reversion may be largely obviated.

Gooseberry Caterpillar.—Where caterpillars were troublesome on Gooseberries last summer take away the surface soil to a depth of two inches or three inches beneath the bushes and burn it. Substitute fresh soil, which need not be of a very rich nature; ordinary garden soil or old potting compost, mixed with a little lime, is suitable. While this work is in progress do not expose the roots more than can possibly be helped. Keep an eye on the young leaves early in May, and if eggs are found deposited on the under sides of the leaves pick them off and destroy them. If the caterpillar itself should appear, spray the bush with Katakiller in the evening and next morning syringe the bushes vigorously with clear water to wash the insecticide from the berries.

General Remarks.—All fruit plantations and borders should be cleaned of weeds, and these and other rubbish should be collected and burnt. The soil about all fruit bushes should be carefully forked over three feet from the stems, leaving the ground neat and tidy. Fruit borders should be treated in the same way, always bearing in mind not to fork so deeply as to damage the surface roots.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville,
Polesden Lacy, Dorking.

Celery.—Sow seeds of Celery now, for early supplies, in a compost of fairly light, loamy soil. Water the soil thoroughly and allow it to drain well before sowing. When the seedlings appear in the boxes place the latter close to the roof-glass and never allow the plants to suffer for want of water. Prick off the seedlings when they are large enough to handle and keep them growing steadily in a warm house until they are well established, then gradually harden them off until planting them out-of-doors.

Autumn-sown Onions.—Onions raised from seed sown last autumn may now be planted in their permanent quarters when the ground is in a suitable condition. The rows should be at least twelve inches apart and a space of six inches should be allowed between the plants in the rows. Firm planting is very necessary. There are many varieties suitable for autumn-sowing, and the grower should select one that will keep in good condition. I have tried many sorts, and to those who have not grown it I would recommend the comparatively new variety Autumn Queen; this Onion is a splendid keeper, grows with a thin neck, and will keep as long as spring-sown Onions when the bulbs are properly harvested.

Sprouting Potatos.—If the seed tubers of early Potatos have arrived no time should be lost in turning them out of the sacks. Collect together shallow boxes or trays and stand the tubers out in these and place them where they will be safe from frost, taking care that they are in a light, airy position.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale,
Lowther Castle, Penrith, Westmoreland.

Nepeta Mussinii.—This plant is deservedly becoming more popular each year as a bedding subject, and from this date to the end of March it may be dealt with. It is easily increased by division; cuttings inserted in the autumn will also provide good plants by the spring for summer flowering. It is valuable when planted out to form a mass or when placed to form a carpet to other kinds of flowering plants, the profusion of delicately tinted lavender flowers showing off to great advantage. The plant has a long season of flowering, from May to September. It is advisable to lift and replant each year, giving the ground, when digging it, a liberal dressing of manure. Thus treated the plants may be set at fifteen inches apart each way.

Dahlia Coltness Gem.—Dormant tubers of this dwarf Dahlia and other dwarf-bedding varieties that have been retained for propagating purposes may now be placed in boxes and introduced to gentle heat. When the shoots are of sufficient size they may be detached and struck singly in small pots. Later on, shift each plant into a 3½-inch or 4-inch pot which will suffice until the time for bedding out arrives.

Dwarf French Beans.—Seeds of French Beans may be sown in clean 9-inch pots provided with plenty of drainage. Place a handful of partly decomposed leaves over the drainage material and three parts fill the pots with compost consisting of equal parts of loam and leaf-mould. Sow from five to seven seeds in each pot. When the plants appear support them with tree twigs. The day temperature should be 70° to 75°. Syringing must never be neglected and later, when the young pods are formed, the roots will require plentiful supplies of water.

Celery.—A sowing of Celery may be made now in heat, removing the seedlings to a cool house. Care should be taken never to allow the young plants to become dry.

FLORISTS' FLOWERS.

CUTTING BACK PERPETUAL-FLOWERING CARNATIONS.

Your correspondent, *Private Gardener* (Vol. LXXVI., page 409), suggests the exchange of notes. This is an excellent idea, and, as he gave a few of his own experiences in the cultivation of Perpetual-flowering Carnations, it occurred to me that the method adopted at Wisley during the trial of Carnations for winter-flowering, in 1921-23, might be of interest to him and to others.

The plants were received in three-inch pots from various sources during the spring and early summer of 1921, and were potted into six-inch pots. Treated in the orthodox manner, these made fair progress during the first season. It was decided to carry on the plants for flowering during the second winter, but instead of the plants being lightly pruned they were cut back quite hard on April 19, 1922 (Fig. 44), and placed in a temperature of 60°; they were kept fairly dry at the roots but sprayed frequently. Within ten days of cutting them back the

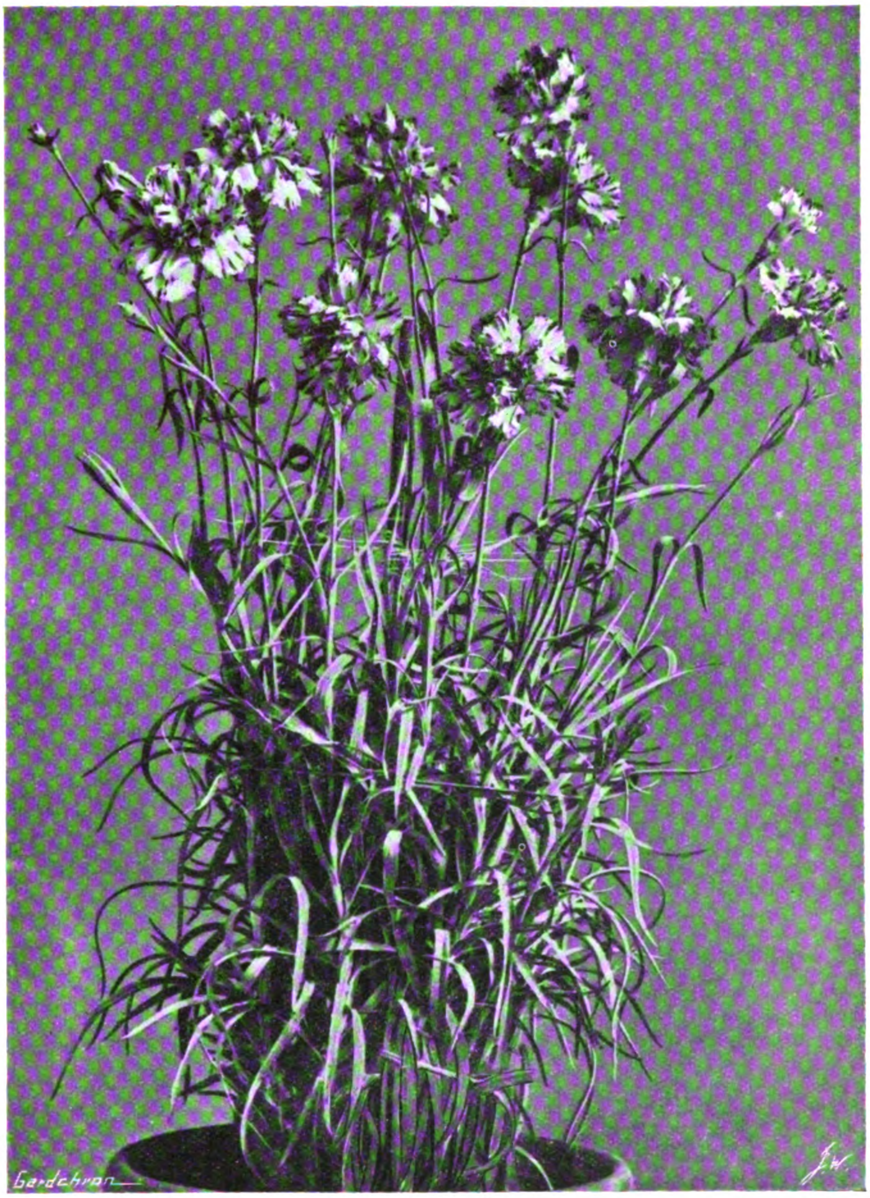

FIG. 42.—CARNATION JAZZ.

Photographed in November; flowering for the first time after being cut back.

hard stems were "breaking" freely, and a week later the plants were removed to a cold frame and gradually hardened to cooler conditions. Potting was commenced on May 10, the majority being transferred from six-inch to ten-inch pots, the weaker plants being put into pots of eight-inch or nine-inch size.

Owing to the severity of the pruning and the large sized pots, watering had to be carried out with extreme care, especially during the first two months after potting.

From this period the ordinary methods of cultivation were followed, such as is usual in the first year. The bulk of the plants made splendid growth and produced a wealth of flowers during the following winter, and onwards through the year of 1923 (Fig. 42). Only a very small number of varieties were inferior in their second season, the varieties Maine Sunshine and Laddie being two examples.

I do not claim that this method is an improvement on raising fresh stock every year, although I could not see any deterioration in size of flower. I am sure, however, that the plants were more floriferous proportionately. For example, six plants of the variety Wivelsfield White produced the following number of blooms:—

	1921	1922		1922	1923
October	8	3	January	3	21
November	5	23	February	3	19
December	3	10	March	4	12

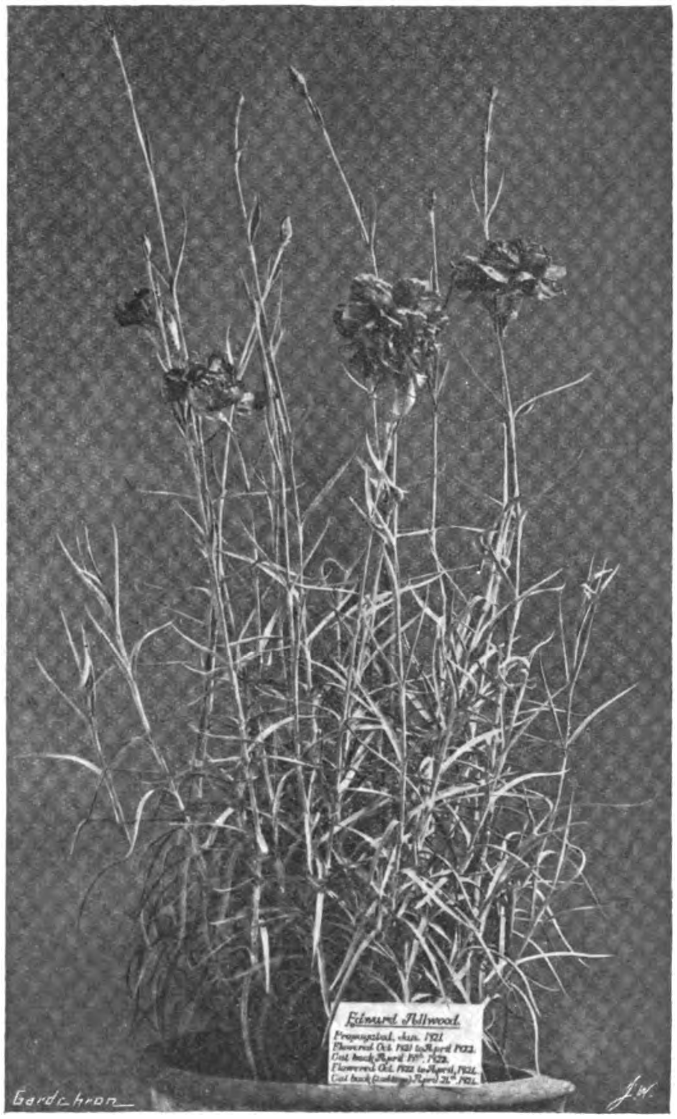
Edward Allwood
Propagated, Jan. 1921
Flowered Oct. 1921 to April 1922.
Cut back April 19th, 1922.
Flowered Oct. 1922 to April, 1924.
Cut back (cuttings) April 24th 1924.
Gard. Chron.
J.W.

FIG. 43.—CARNATION EDWARD ALLWOOD.
Flowering after the second cutting back.

A serious defect of this method is the loss of flowers during the summer. Where a supply must be kept up, this could be easily procured by the same system that is adopted in growing Malmaison varieties, viz., by having two sets of plants, of one year and two years' old respectively. If by any chance the propagation had been a failure, or cuttings difficult to procure in time—or as a possible means of getting rid of a bad attack of rust or spider in a collection—this procedure might be adopted. Rust gave a considerable amount of trouble during the first season, as was only to be expected with plants coming from many different sources. About half-a-dozen plants were so badly infested that they had to be quarantined during 1921.

When the plants were cut back these bad cases were cut rather harder than the rest, making them quite devoid of foliage. The new growth of these and all the rest of the collection, which numbered over two hundred varieties, and included Perpetual Malmaisons, and such susceptible varieties as Mrs. Walter Hemus and Nora West, was entirely free from rust.

By way of experiment a dozen plants of the original collection (1921) were cut back on April 24, 1924, for the second time. These remained in the open during the summer without any special attention beyond a top dressing. I enclose a photograph (Fig. 43) taken January, 1925, of one of the best plants.

In conclusion I venture the opinion that the cutting back of the plants very early in April might give even better results. *J. Wilson, Wisley.*

CARNATION BARONESS DE BRIENEN.

This is an old and tested variety that I have grown ever since it was first introduced, and I would be reluctant to part with this old favourite.

Of all the newer varieties I have tried not many of them have the strong, robust constitution of Baroness de Brienen, for the plant is of a fine, sturdy growth, and gives an abundance of blooms throughout the winter at a time when they are most appreciated.

The colour being of a soft, delicate pink, greatly enhances the value of the blooms for dinner-table decoration. It is also an erect grower, with stiff stems, which require little or no support.

Another strong point in its favour, and a very important one, is that it roots quicker than any other variety I know.

Most cultivators of Carnations in private establishments have their own particular system of propagation, and the results are usually satisfactory. I have tried many ways of rooting Carnation cuttings, and the method I have found most successful is the following:—I place a box or boxes two-and-a-half to three feet long and about eighteen inches deep on the hot-water pipes in a vinery in which the vines are being started into growth. In the bottom of each box I place a layer of ordinary builders' bricks, flat ways, quite close together, so that the sand which is to follow will not trickle through the crevices. The bricks are covered with sharp, brown sand to the depth of three inches. I prefer brown sand to silver sand, as it contains a certain amount of nourishment for the plants.

The sand is washed to cleanse it from all impurities, pressed fairly firmly, and then soaked thoroughly with water to settle it before inserting the cuttings, which are simply pressed in with the finger and thumb, fairly closely together. The bottom heat is maintained at 50°. Moisture is retained in the bricks sufficient to carry the cuttings through until they are rooted, which will be in about three weeks time. Squares of glass are placed over each box, and the glass is wiped at least three times each day to prevent the moisture of condensation from damping the cuttings.

Carnation plants are very partial to wood ash and burnt-clay mixed with the soil. When the cuttings have rooted the roots cling partially to the bricks in search of food, so that the bricks serve a two-fold purpose. *J. A. Kirkwood, Sutton Place Gardens, Guildford.*

BULB GARDEN.

COLCHICUM SPECIOSUM ALBUM.

This hardy Colchicum, one of the very choicest of autumn-flowering bulbous plants, should find a place in every garden where good and choice plants are cherished. The large flowers are of the purest white and with petals of very firm texture, with the added attraction of a distinct lemon-yellow base.

C. s. album will thrive and increase in most gardens if provided with a dry rooting medium of well-drained, sandy loam, although, as is the case with many plants, it will sometimes, without any apparent reason, fail to succeed in certain positions. On the whole, however, it may be considered an "easy" plant, and having now become reasonable in price, it should grace many gardens with its lovely flowers during September. *Ralph E. Arnold.*

GOVERNMENT BOTANIC GARDENS.*

Continued from page 97.

By the time that Roxburgh returned, restored to health, in October, 1799, the Board of Trade knew that Buchanan's judgment as regards Chittagong had been as accurate as it had proved in respect of Bengal. The Bengal Government could not favour Buchanan's suggestion as to Cape Comorin; this would have involved the transfer of their experiment to the Presidency of Madras. But Bengal approved an alternative suggestion, made by Roxburgh, for the formation of a botanic garden at Penang. This was acted upon in 1800, as was a further suggestion by Roxburgh, carried out in 1803, that a spice plantation be established at Fort Marlborough in Sumatra. The plants with which the latter was stocked were brought direct from the Moluccas by William Roxburgh, junior, who had been appointed by the Court of Directors in 1800 to the post of Assistant to his father in the Calcutta Botanic Garden.

The enthusiasm of the Government at Calcutta presently waned. The Penang Garden was able to ripen Nutmegs; the Fort Marlborough plantation proved self-supporting. But they were not under the eye of the Governor-General, and when, in 1805, Roxburgh took furlough to Europe and Buchanan went to England on duty as a member of Lord Wellesley's staff, the opportunity was taken to abolish the Penang Garden, though the plantation in Sumatra, which was free from the objection of being a "scientific" establishment, was permitted to thrive. The Calcutta Botanic Garden, of which young Roxburgh held charge during his father's absence, could not be suppressed without the sanction of the Court of Directors at home.

It was, naturally, Roxburgh's hope that his son might be nominated his successor, and the Court of Directors went so far as to agree, provided young Roxburgh should be found qualified. The reason for the appointment of Roxburgh himself in 1793 was that the Court had been advised that part of the duty of the superintendent of the Calcutta Botanic Garden should be to describe the vegetable productions of their Indian possessions and to communicate these descriptions to the learned of Europe. They could hardly accept Roxburgh's plea, submitted in 1806, that for the post he occupied "science is not necessary; that a cultivator alone is required:" to have done so would have been to stultify the earlier decision. Young Roxburgh, by his father's own admission, however competent he may have been as a "phytologist,' was not a "botanist" able to describe plants and communicate their descriptions to the learned of Europe. But if Roxburgh's wish could not be gratified, his son's prospects were not injured. Soon after Roxburgh's return, the superintendentship of the spice plantatian in Sumatra became vacant, and in 1807 young Roxburgh was placed in charge of the garden which had been stocked by himself in 1803. This post which he was well qualified to fill, young Roxburgh held until he relinquished the Company's service in order to become a private planter in Sumatra, a decision he reached before his father retired.

After a period of quiescence came the wave of "scientific" enthusiasm, which saw the formation of a botanic garden in Java in 1817, the conversion of a "pleasure garden" at Saharanpur, which owed its existence to the munificence of an Indian noble of means and taste, into a botanic garden for Northern India, and the transfer in 1821 to a more suitable locality of the garden in Ceylon which had been revived in 1810. In 1822 Dr. Nathaniel Wallich, Buchanan's successor at Calcutta, visited the Malay Peninsular as the guest of Sir Stamford Raffles, and was able to secure the restoration of the Penang Botanic Garden. In 1823 Raffles formed a new botanic garden at Singapore. Again, however, official enthusiasm was short-lived; the second Penang garden was abolished in 1826; the garden formed by Raffles at Singapore was abandoned in 1829. After another and longer period of neglect came another wave of enthusiasm; a second botanic garden was formed at Singapore in 1878 and a third botanic garden at Penang in 1884. The latter only survived until 1910, and if the lessons of history justify an "intelligent anticipation of events," we need hardly doubt that one day some reason may be manufactured for the abolition of the garden which at present replaces the one whose formation was due to the foresight and judgment of Sir Stamford Raffles. The experience of India proper has hardly differed from that of Malaya. Efforts made by the Presidency with which Sir George Birdwood was most intimately associated were not more successful than those of Madras; largely owing to him, Bombay can boast an Oriental "paradise," but hardly a botanic garden. Even in Upper India, for which the Saharanpur Garden served as a useful scientific centre during three-quarters of a century, the attempt to maintain a Botanic Garden has been abandoned. There is now only one Indian Government Botanic Garden.

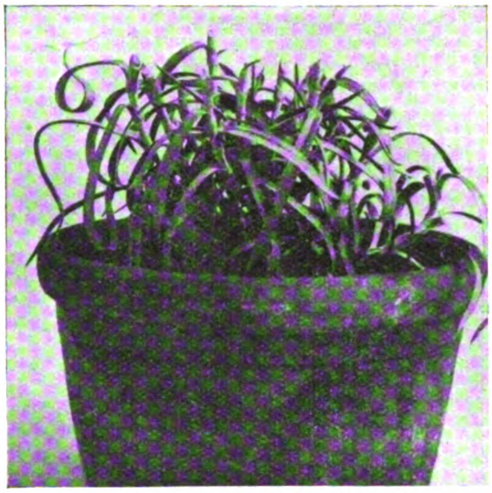

FIG. 44.—A CARNATION PLANT AS CUT BACK IN APRIL (see p. 107).

This record is perhaps disappointing, but it need hardly be regarded as surprising. A botanic garden, to be of use, involves considerable recurrent expenditure. If its work is to be of value, the Government that maintains it must discourage attempts to produce direct revenue; energy expended in this direction involves corresponding impairment of scientific efficiency. If a province cannot afford a botanic garden which brings no revenue, it is sounder economy to do without one: the return which a botanic garden brings is indirect. How vast that return may be South-eastern Asia knows. By what they have done in connection with the creation of such industries as those connected with tea, cinchona and rubber, all the outlay by their respective Governments in respect of the botanic gardens of Calcutta, Buitenzorg, Peradeniya and Singapore has been repaid a hundredfold.

If the facts suggest that there has been a tendency at times to abolish a botanic garden whenever this was possible, this policy has rarely been the direct result of official antagonism towards institutions that are included in the group quaintly classed by secretaries for finance as "Scientific and other Minor Departments." More often the action has been an indirect result of the attitude towards the work of a botanic garden adopted at various times by botanical thought as a whole. That attitude has not always been the same; that it should often have been a critical one need hardly create astonishment. It has been, and must remain the duty of a botanic garden to increase the sum of natural knowledge; to place the natural knowledge it may possess at the disposal of industry and commerce; to do what it can to apply this natural knowledge in practice. Among the steps taken by the Calcutta Botanic Garden, for example, to add to natural knowledge may be mentioned those of systematic and economic survey, both commenced during the incumbency of Roxburgh, and the former, at least prosecuted with vigour ever since. Systematic survey work began in the Spice Islands in 1796; economic survey work began when Roxburgh's suggestion that Buchanan be sent on deputation to Chittagong was carried into effect in 1798. In survey work reliance must be placed on the method of observation. The obligation of botanic gardens to depend on this method in some of their work has been the subject of unfavourable criticism by those so fortunately situated as to be ably to employ the method of experiment in all they undertake. In placing the natural knowledge they possess at the disposal of others, it is the duty of botanic gardens to arrange for floristic and monographic study, a proceeding which ensures for them the disapproval of those who regard "system" as unscientific and the preparation of hand-lists and gazetteers as mechanical. More antiquated even than the continued reliance on observation and the continued employment of system, seemed to the academic eye of half a century ago, that continued belief of botanic gardens in the validity of the seventeenth century injunction that the application of natural knowledge is as deserving of attention as its advancement. To this determination of botanic gardens to abide by what was good in the old, while absorbing what was best in the new, India owes her tea-gardens, Java her cinchona plantations, Ceylon and the Malay Peninsula their rubber industry. But the English and the Dutch Indies owe to this attitude on the part of their botanic gardens another and perhaps a greater debt. What has been gained as the result of these successful ventures can be computed. What has been saved to industry and commerce by the avoidance of enterprises that botanic gardens could show were doomed to failure, is almost incalculable.

To be concluded.

PUBLIC PARKS AND GARDENS

The Urban District Council of Wolstanton has decided to make four public tennis courts and two bowling greens at an estimated cost of £2,000.

The Ministry of Health has sanctioned a loan of £1,750 required by the Corporation of Worthing for the purchase of property in Park Road for a recreation ground.

The Urban District Council of Epsom will apply to the Ministry of Health for sanction to borrow £2,500 for laying out a new recreation ground. The following items are provided for: fencing and gates, £660; lodge, £750; conveniences, £200; shelter, £150; drainage, £250; paths, £250; hard tennis courts, £175; fencing, £50, and contingencies, £15.

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* The Sir George Birdwood Memorial Lecture, delivered before the Royal Society of Arts (Indian Section), on Friday, January 9, 1925, by Lt.-Col. Sir David Prain, C.M.G., C.I.E., LL.D., F.L.S., F.R.S., late Director of the Royal Botanic Gardens, Kew.

ORCHID NOTES AND GLEANINGS.

STAUROPSIS GIGANTEA.

A fine raceme of this noble old species on a plant flowered by Messrs. Stuart Low and Co., Jarvisbrook, Sussex, shows that remarkable and rare Orchids still retain their place, especially in the older nurseries. The raceme bore large coriaceous flowers nearly three inches across, coloured pale yellow, spotted with chestnut-red, the lip being white with purple lines. The plant with its broad leaves is highly ornamental and ranks only with the stately S. lissochiloides, noted from Messrs. Armstrong and Brown last year. These two Orchids might better have been retained under Gaudichaud's generic name Fieldia (1826) than classed with the comparatively small, and dissimilar S. fasciata, S. philippinensis and S. undulatus (more recently included). Stauropsis gigantea was discovered by Wallich in Moulmein in 1826, but was not flowered in England until 1858. It was, and still is, commonly known in gardens as Vanda gigantea.

CYPRIPEDIUM ETHEL M. DU BOULAY.

Three flowers taken from widely differing seedlings flowering in a small batch raised by crossing Cypripedium Clio, Chardwar variety and C. Hera-Euryades are sent by Frederick J. Hanbury, Esq., Brockhurst, East Grinstead.

Two dark varieties have strong features of C. Hera-Euryades in the dorsal sepals, bearing spotted lines of claret colour and purplish rose, with broad white margin and white upper half. The largest and totally different flower, named variety Casabianca, resembles a very large form of C. insigne Sanderae, the petals, lip and base of the dorsal sepal being yellow, with a slight emerald-green tint, the margins and upper third of the dorsal sepal being pure white.

It is extremely interesting to see the very dissimilar features of the earlier ancestors shown by the same batch of seedlings. The handsome variety Casabianca reveals the fact that a yellow C. insigne was a parent of the form of C. Clio used.

NEW HYBRID ORCHIDS.

(*Continued from January 3, p. 3.*)

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Alfred Dean	C. Sirius × B.-C. Vilmoriana	Charlesworth.
Brasso-Cattleya Nerto	B.-C. Mrs. J. Leemann × B.-C. Ilene	Perrin.
Brasso-Laelio Cattleya Orceola	B.-L. Digbyano-purpurata × C. Trianae	Clement Moore, Esq.
Cattleya Anne Claude	amabilis × labiata	Mons. Blevenec.
Cymbidium Camilla	Doris × Lowio-grandiflorum	Cowan.
Cymbidium Giant Rose	Alexanderi × Schlegelii	**Stuart Low.**
Cymbidium St. Andre	Erin × Alexanderi	**Sanders.**
Cypripedium Abel Chatenay	Druryi × Gaston Bultel	Luxembourg Gardens.
Cypripedium Babylon	Nirvana × Leeanum Gratrixiae	**Sanders.**
Cypripedium Bucharilis	Buchanianum × aureum	**P. Smith Esq.**
Cypripedium Chloe	Baron Schröder × Mrs. Wm. Mostyn	Cowan.
Cypripedium Claymore	Vashti × Thisbe	Flory & Black.
Cypripedium Colleen	Peter × Perseus	Flory & Black.
Cypripedium Conference	Chadwar Bulldog × Hera-Beckmannii	Armstrong & Brown.
Cypripedium Ethel M. du Boulay	Clio Chardwar variety × Hera-Euryades	F. J. Hanbury, Esq.
Cypripedium Gasmiram	Gaston Bultel × Eurybiades	Hamilton Smith, Esq.
Cypripedium Golden Wren	Glorita × Moonlight	Flory & Black.
Cypripedium Imshi	Vandyke × Peter Pan	Mrs. Gratrix.
Cypripedium Lord Allenby	Gaston Bultel × Baron Harefield	Mrs. Gratrix.
Cypripedium Luminous	Alabaster × Carola	Sanders.
Cypripedium Sandru	Bucharilis × Mrs. F. Sander	P. Smith, Esq.
Cypripedium Stamperland	Glorita × Christopher	R. Paterson, Esq.
Cypripedium The Provost	Alcibiades × Purple Emperor	Flory & Black.
Cypripedium Thomer	Lord Wolmer × Thora	Flory & Black.
Cypripedium Victoria	Comorin × Victor Hugo	Mrs. Gratrix.
Cypripedium Worsleyi	Hestia × Lady Dillon	H. Worsley, Esq.
Laelio-Cattleya Barres	C. Dowiana aurea × L.-C. Lucasiana	Vacherot & Lecoufle.
Laelio-Cattleya Rubencita	Carmencita × Rubens	McBean.
Laelio-Cattleya Sunbelle	C. Thora × L.-C. Serbia	McBean.
Odontioda Maria	Oda. Sanderae × Odm. Pescatorei	Sanders.
Odontioda Oberon	Odm. Titania × Oda. Cooksoniae	C. Cookson, Esq.
Odontoglossum Ceramic	Watsonii × eximium	McBean.
Odontoglossum Delphin	illustrissimum × nitidum	McBean.
Odontoglossum Elizabeth Midgley	cirrhosum × Queen Alexandra	Mansell & Hatcher.
Odontoglossum Epsilon	ardentissimum × Sambo	McBean.
Odontoglossum Ophelia	Melanthus × St. James	**Charlesworth.**
Odontoglossum Titan	amabile × l'Empereur	A. Hanmer, Esq.
Odontonia Alesia	Odontonia Milly × Odm. Llewellyn	**Charlesworth.**
Odontonia Nesta	Odontonia Gladys × Odm. St. George	**Charlesworth.**
Oncidium boissiense	varicosum Rogersii × Forbesii	Vacherot & Lecoufle.
Vuylstekeara Dulce	Miltonia Bleuana × Oda. Elsie	Charlesworth.

TREES AND SHRUBS.

THE WILBERFORCE OAK.

The note by Mr. A. D. Webster on this tree (p. 71) was interesting from one side of the question, but there are many who are of the opinion that the Oak with the stone seat beneath it is the tree that the statesmen sat under.

The four reasons given by your correspondent sound reasonable, but when they are analysed they fail in their conviction. Take No. 1, for instance; to state that there is no steep descent into the Vale of Keston from this Oak is ridiculous. I have looked down from the pathway and also when standing by the side of the tree, and I have often thought what a steep descent it is down to Keston Church. Again, the reference to hiding the view, with intervening trees, is misleading, for many of these trees have grown to a large size since 1788.

Unless records can be produced that the Oaks mentioned are three hundred to four hundred years old, I fail to see how they can be acclaimed to have attained that age, the ages of trees being so very difficult to determine from outward appearances.

We have clear imaginations in point No. 2. What would be more reasonable at that period of the eighteenth century than that two gentlemen should take a stroll around the park, pass along the very small footway, and then sit down under this very tree, which lends itself to this purpose, the pathway being just above the level of its roots. No one will agree that this pubilc footpath in the heart of the country one hundred and thirty-seven years ago was frequented by a great number of people. It is more probable that two or three workpeople, such as farm hands, passed that way to and fro to their work. I well remember the footway was not so wide half-a-century since as it is now.

I would bracket points Nos. 3 and 4 together, and state that the Right Honourable William Pitt became the owner of Holwood about the year 1785, a period when great alterations and improvements were carried out on the estate. Some considered that Pitt spoiled a part of the old Roman Camp; Pitt sold Holwood about 1801. Readers will note that from 1785 to 1788 was only three years, the latter date of which is in Wilberforce's diary. The picture so vividly portrayed of the Oak near the residence being so convenient for the talk about the Slavery Bill may be considered from another point; the view seen to-day from the mound may have been obstructed at the time, and Pitt may have had it cleared later than the Wilberforce visit The wooded country approached very close to the residence in the eighteenth century. *Mark Mills.*

CYTISUS NIGRICANS.

A native of Central and South-eastern Europe this Broom is perfectly hardy and easily grown in any light soil, no matter how poor, with full exposure.

It is an admirable subject for massing, as are most members of the genus, but it is peculiarly useful since it flowers from July to autumn when most other kinds are over.

Though the yellow blossoms are comparatively small they are borne in great profusion in terminal spikes, often a foot long, on the current year's wood, so that well-grown bushes create a fine effect.

Unlike the majority of Brooms, C. nigricans is the better for fairly hard pruning in spring. If young plants are treated thus from the beginning they may be kept bushy and to less than half their normal stature of five feet. The use of the knife also encourages a more prolific growth of that fresh wood upon which the flowers are produced. With this object in view some of our plants are cut back to the base in spring like dwarf hardy Fuchsias, and the result is most pleasing.

CORONILLA GLAUCA.

This evergreen shrub is one of the earliest of the Leguminosae to break into flower, indeed, in sheltered gardens, close to the sea on the west coast, it may often be seen in full bloom soon after the New Year.

Its fresh green, slightly glaucous, pinnate leafage is always attractive, and the large flowers, borne in conspicuous umbels, are a singularly rich and attractive yellow.

Although we are six miles from the sea our plants of C. glauca have never been injured badly by frost, the 12° registered in November leaving it absolutely unharmed. This experience suggests that C. glauca is hardier than is generally supposed. Our specimens are growing in very dry, stony soil and the position is one which gives shelter from keen winds yet is fully exposed to sun. *N. Wales.*

DAPHNE MEZEREUM.

The garden includes no more welcome harbinger of spring than the common Daphne Mezereum. It is in the nature of a surprise to see its rosy flowers glittering in the weak sunshine of a bleak, half-wintry day, and to bear in mind at the same time that it represents a race of tender plants renowned for oriental associations, exquisite beauty, and rich perfume.

Whether D. Mezereum is a native of Britain is an open question, and considering the glorious uncertainty of the origin of things, perhaps it does not matter, but it is most certainly met with in apparently wild positions in several counties in the South of England.

D. Mezereum presents a singular appearance when dotted with its richly coloured flowers on brown, bare stems, nor is its appearance less singular when the berries appear.

It is when the flowers are fading that the delicate, light green leaves peep out, but in the autumn, when the berries are ripening, the leaves change to a dull green, and there are so many other interesting things in the garden that we forget the Mezereum; but it will take a long time now to remove the remembrance of its cheerful flowers from our minds.

The common variety is probably the best, but the white, the lilac, and the red sorts are serviceable and give effect and variety. This shrub succeeds best in a strong loam. A stock of plants may be raised from seeds, which should be first stratified in sand as they take two years to germinate. *W. Auton.*

NOTES FROM GLASNEVIN.

ORCHIDS IN WINTER.

Since the beginning of the year the chief display has been furnished by numerous varieties of Calanthe and Paphiopedilum (Cypripedium) and from the horticultural point of view it would be difficult to over-estimate the importance of these two genera in the depth of winter (Fig. 41). Neither present any insuperable difficulties in cultivation, and given reasonable treatment rarely fail to come up to expectations. Varieties are now so numerous, especially in the latter genus, that most gardens cannot accommodate more than a few, but the achievements of several hybridists are so notable that no garden where Orchids are grown can afford to be without at least a selection of the best hybrids. Even a botanic garden, though perhaps primarily concerned with species, cannot neglect hybrids, for in no other order of plants are combinations of characters so richly exemplified.

It happens, however, that at this season many interesting species of other genera also flower. Eria is a genus, for the most part, confined to botanical collections, but certain of its species are by no means unattractive. Eria stricta (Fig. 45) has stout, erect pseudo-bulbs, furnished, when young, with plicate, scale-like leaves and surmounted, when growth is complete, with from two to four leathery, falcate leaves tapered at both ends. The racemes arise near the apex of the mature growths, and bear numerous pure white flowers, which, though small, are very beautiful. Eria bicolor, a native of Ceylon, is similar in habit to the last named, but the flowers are larger and more loosely arranged on the spike; they are glistening white except the top of the column, which is reddish-purple, hence the specific name. Both species flourish in the intermediate house and require cultural conditions such as suit Dendrobiums.

Liparis macrantha was presented to Glasnevin by the late Mr. H. J. Elwes, who introduced it from Formosa. In growth it forms a cluster of cylindrical or slightly compressed pseudo-bulbs which taper to the apex, the current growth bearing from four to six alternative leaves which clasp the pseudo-bulb, the blade or free portion being from two-and-a-half inches to three inches wide, strongly ribbed and tapering to an acute point, the whole leaf strongly resembling the foliage of some Calanthes. The scape, eighteen inches high, arises from the apex of the current growth, bearing numerous, deep Plum-coloured flowers an inch wide, produced in succession as the spike elongates. Perhaps more curious than beautiful when compared with more brilliantly coloured Orchids, L. macrantha is nevertheless of much botanical interest.

Selenipedium Sargentianum, introduced by Messrs. Sanders from the Pernambuco district of Brazil, is one of the most striking and beautiful of the genus. The leaves are of leathery texture, light green with paler margins, from eight inches to one foot long, tapered to the apex. The scape is paniculate, nearly three feet high in the plant now flowering, and has several flowers at the extreme apex; there is a second panicle some inches below. The ground colour is yellowish-green but the sepals and petals are beautifully veined and margined with bright red, the latter being also somewhat twisted and undulate; the pouch is mottled and veined likewise. This species requires warm house treatment. *J. W. Besant.*

NOTES FROM A WELSH GARDEN.

Azara microphylla is one of the most delightful of all the evergreens grown here, which cannot be considered truly hardy. With us, however, this pretty Chilean shrub has proved quite trustworthy in a light, warm soil, and we have it under the boughs of a tall Oak from which it doubtless gets some protection. The little dark-green, glossy leaves, which throng the elegant branches of A. microphylla, make this an attractive shrub at any time, but it is during the early months of the year, when the numerous and minute flowers are clustered beneath the foliage, emitting a sweet scent of Vanilla, that this subject is so pleasing. This year A. microphylla was full of blossom in the third week of January.

Another deliciously fragrant shrub already (Feb. 1) having many of its ivory-white flowers fully expanded is Daphne blagayana. Though not a few gardeners often complain of indifferent success with this beautiful species, we have not yet had to record any losses. This we attribute mainly to the thorough drainage of the light, gritty loam and to the fact that, as the plant grows, it is top-dressed almost up to the leafy tips of the branches with leaf-mould and sand. This is done not less than once, usually twice, a year, and at the same time stones are placed on the growths to hold them down. The roots of our specimens of D. blagayana get fairly dry after the plants have made new wood, with the result that they get a thorough rest.

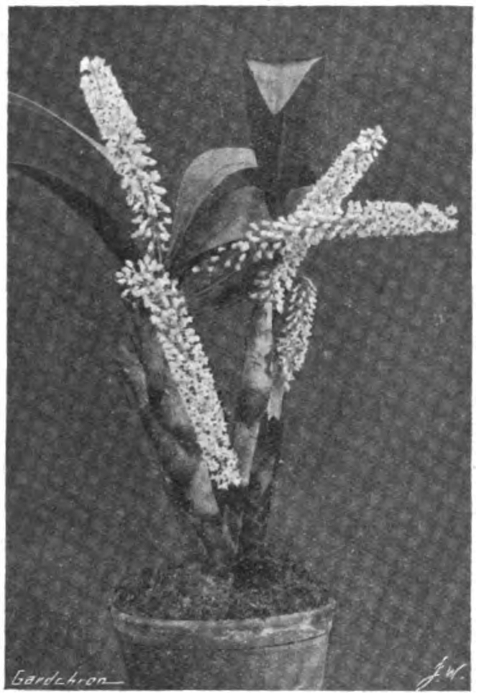

FIG. 45.—ERIA STRICTA AT GLASNEVIN.

Several varieties of Pulmonaria officinalis (syn. saccharata) have been in bloom for some weeks past. These garden forms always precede plants of the native species, which will not flower until March, even in this mild season; and it will be still later before the really deep blue, P. azurea, with unspotted leaves, and other good blue Pulmonarias expand their lovely blossoms. But if these are so superior to the "Spotted Dogs," the latter give the shady places of the woodland a touch of colour at a time when there is little else in bloom. Yet another inhabitant of these sunless spots is Corydalis cava, of which the white form is particularly charming. A root of this Corydalis has occupied a mossy corner in a bank of Gaultheria nummularia for years, and every season at this time it produces a cluster of its snow-white flowers which look, at first sight, like Roman Hyacinths, and which, unlike so many of its kindred, are delightfully fragrant.

The foliage of some of the Senecios is, I think, at its best in mid-winter. That of S. laxifolius and S. rotundifolia is especially noteworthy among those grown here, for the upper leaf surface in these is now a richer, glossier green than it is at any other season, and this seems to be intensified by the white or creamy felt of the underside showing in a clean-cut, marginal line. No less may be said of S. Monroi, the leaves of which are prettily waved, but S. Huntii, on the contrary, appears to get even more downy, and therefore whiter, during winter. A similar strong contrast between white and vivid green is seen at this season in that handsome shrub, Corokea macrocarpa (sometimes erroneously listed as C. buddleoides) which has, I believe, the largest leaves of the family.

In passing, I may take the opportunity of expressing the wish that someone in authority would settle the matter of the difference between Senecio laxifolius and S. Grayi. The latter I have had, and lost, and in my endeavours, to secure a new plant I have tried six well-known nurserymen without satisfaction. Three of these sent me S. laxifolius, from one came S. Monroi and two others submitted that they thought the shrubs they listed as S. Grayi were S. laxifolius. I do not think that I should have much difficulty in recognising S. Grayi when it blooms, by its denser, flatter corymbs, but it seems that even experts are apt to confuse the two species at this season, though I have always looked upon S. Grayi as having broader and more rounded leaves. But is there any reliable, specific distinction in one or the other which may be recognised during the winter by the average gardener or amateur?

Throughout the later part of January Iris reticulata was excellent, but, the weather being rough, we cut the opening buds of this little gem and brought them indoors so that their delicious Violet perfume should not be wasted out-of-doors. That charming Leucojum, L. carpaticum, was in flower at the same time, thus following quickly the earliest of the Snowdrops. The very short, stout stems of the Carpathian Snowflake appears to be especially designed to withstand the inclemencies of the early season, and there is a very distinctive charm in the large, well-rounded, orange-tipped bells. Crocus Tommasinianus has been delightful in the woodland, though suffering much from wind, and this, with the Dutch Crocuses, whose safety lies in numbers, are among the few early-flowering kinds which manage to escape damage by mice and voles. *A. T. Johnson, Ro Wen, Talycafn, N. Wales.*

ALPINE GARDEN.

SEMPERVIVUM GLAUCUM.

One of the finest, if not the finest of the Houseleeks, S. glaucum (syn. Comollii) will thrive and increase freely on a rocky ledge or in a rock crevice with a southern exposure, and planted in a deep, gritty soil.

The rosettes, which are almost as large as any found in the genus, of these, at any rate, suitable for British gardens, are greyish-green, suffused or "shot" with blue, purple, and crimson. This Sempervivum is a fine plant and is especially valuable for lending colour and interest to the rock garden during the winter; the severest weather will not injure it and it is very easily propagated. *Ralph E. Arnold*

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ON THE OCCURRENCE OF THE SILVER-LEAF FUNGUS IN RHODODENDRONS

THE disease known as Silver-leaf, caused by the fungus Stereum purpureum, attacks particularly members of the Rosaceae, but is known to occur also in plants belonging to entirely different families. In several varieties of Apples and Plums the fungus has caused exceedingly serious damage, and in many parts of the country whole orchards of the well-known Victoria Plum have been ruined. The occurrence, therefore, of this parasite on a new host, especially when it is an important cultivated genus, is worthy of record even though the damage be slight and observed only in isolated cases.

The presence of the fungus in Rhododendron was first observed by Mr. C. P. Raffill, Assistant-curator in charge of the Temperate Department at Kew, in 1919. The plant infected was an old specimen of R. griffithianum, which bore on some dead and dying branches a number of dull purple sporophores (*i.e.*, spore-bearing bodies). The specimens were examined in the laboratory at the time, and Mr. Raffill's determination of the fungus as Stereum purpureum was confirmed. On cutting off the affected branches the wood was found to be discoloured, being either deep brown or greyish-brown. The tree was obviously decidedly unhealthy, and the evidence suggested (though it was not conclusive) that the fungus was parasitic. As the plant was probably thirty years old and the branches examined were for the most part dead, it appeared possible that the fungus (which leads a saprophytic as well as parasitic mode of existence) occurred merely as a saprophyte on the dead branches and was therefore in no way responsible for their death. Other suspicious cases have been noticed during the past five years, the plants attacked including Rhododendron arboreum and certain of the Chinese species. Quite recently, however, two striking cases confirming the parasitism of the fungus on Rhododendron have been observed.

The species affected in both cases is R. barbatum, one plant growing under glass and the other in the open. In the case of the former, the plant, which is about fifteen years old, has for some years showed signs of ill-health. The first symptoms are seen in the leaves, which become limp and hang down. This wilting is followed sooner or later by dying back. (It should be noted that no silvering of the foliage takes place). During the autumn a number of small sporophores burst through the bark in a vertical series on living branches, *i.e.*, those which are still bearing green leaves. On cutting back the small, affected branches, and on cutting out a main branch, the characteristic dark brown stain was apparent. Typical sporophores of S. purpureum emerged within a few weeks from the cut surface of the stump, and smaller sporophores appeared on some of the scars on the other branch.

The tree in the open affords, if anything, a more striking example of the parasitic nature of the fungus on this host, and shows that the disease is not confined to plants grown under glass, where conditions might be regarded as unsuitable, or the plants as coddled. The specimen in question is about twenty years old. As in the previous case, branches which have died back were removed close to the main branch. The wood was discoloured, and a few weeks later small sporophores of Stereum purpureum developed from each of the cut surfaces and also from various other positions on the stem. The branch in question is a large one, forked from near the base, and, though bearing abundance of healthy leaves above, it is clear that the wood of both forks is invaded with mycelium. As the mycelium gradually destroys the wood, it is presumably only a matter of time before wilting will occur and ultimately dying back. It should, however, be remembered that even in the much more susceptible genus Prunus the host occasionally succeeds in warding off further development of the fungus and complete recovery ensues.

The discovery that Silver-leaf is caused by Stereum purpureum was made by Prof. J. Percival. His work has been confirmed and vastly extended by Mr. F. T. Brooks, to whom practically all our knowledge of the subject is due. On comparing the disease as seen in Rhododendrons and in Plums, the attack by the fungus is found to differ in three marked respects: (1) the course of the disease is slower; (2) there is no silvering of the foliage, and (3) the fungus develops sporophores from branches which are alive, this being in striking contrast to the usual course of events in Plums.

With regard to (1) it is not surprising that the mycelium of the fungus should be slow in penetrating the tissues of a hard-wooded plant such as Rhododendron. The wood is composed of vessels and fibres of very small calibre, and the fungus encounters greater mechanical difficulties than in coarse-grained wood. As to the lack of silvering, Brooks has shown that this feature is not an invariable accompaniment of an attack by S. purpureum (*e.g.*, in Birch and Beech). The third difference referred to is more apparent than real since it will be found on examination that either a sector of the branch or a small part of the periphery has been killed, and that the sporophores arise from a strip of dead tissue even though the branch as a whole may be alive. Brooks has already pointed out that the development of sporophores from partially dead wood may take place very exceptionally in Plums, and its occurrence in Rhododendron is only another example of the same phenomenon. The attack in Rhododendron, therefore, though differing in certain respects from that usually found in Rosaceae is not fundamentally distinct.

Although no inoculations have been made, and no research carried out in connection with the above cases, one is justified in assuming from the evidence available, and from all that is known of the habits of Stereum purpureum, that the fungus is acting as a parasite in Rhododendron and is responsible for the dying back of the branches.

Although this fact must be recorded, Rhododendron lovers need not be unduly alarmed. At present only a few varieties have shown susceptibility, and the development of the disease appears to be unusually slow. By prompt action and scientific method the fungus may possibly be outwitted. At the same time it should be remembered that the dying back of Rhododendron shoots is no new event, and it is possible that Stereum purpureum has been responsible in the past, and that it is acting in a similar way, though unrecognised, in other parts of the country. Now that attention has been called to the subject, growers should be on the alert.

MEASURES OF CONTROL.

Treatment may be considered under four headings:—(1), Pruning; (2), protection of wounds; (3), feeding; and (4), hygiene.

(1) When once a tree commences to die-back the rule in Silver-leaf is to cut the branch or branches back to sound wood, *i.e.*, to a point well below the dark stain. This rule should doubtless be adhered to in Rhododendrons, but, inasmuch as the precise course of the disease in this host is not known, if a small strip only of diseased wood exists growers may prefer to adopt less drastic treatment, especially as an infected branch may bear healthy shoots and produce flowers for several, and possibly many, years. It should be remembered, however, that the mycelium in the branch spreads downwards as well as upwards, and that there is a danger of branches lower down becoming infected. Prompt cutting back, therefore, may save the tree.

(2) During the process of pruning all wounds should be immediately protected with gas tar. It has been proved that the fungus spores alight on freshly made wounds and infect them at once, and that entry by means of older wounds is not so easy. Even quite young wood is liable to infection and obviously also injury due to snapping branches by wind or snow. Gas tar should be employed in preference to Stockholm tar, since the latter early loses its antiseptic qualities. A second dressing of gas tar should be given in about three months time.

(3) As the water-conducting tissue of affected stems is partially blocked owing to the presence of mycelium, everything which can assist the ascent of sap and encourage the development of new conducting tissues will be to the good. The roots should be lightly mulched with good leaf-mould to preserve the surface fibres and to encourage the production of new ones. On no account should the plant suffer from lack of water in summer. Food may be added to the mulch so far as is safe, in the form of old cow manure or even thoroughly rotted stable manure if the former is not available.

(4) Every gardener should know the fungus Stereum purpureum and seek to banish it from his domain. The purple sporophores often develop in profusion in wet weather (especially in autumn) not only on the dead wood of Apple and Plum, but on that of many other dicotyledonous trees (Coniferous wood is practically immune). The millions of spores produced by these bodies are distributed by wind, and they readily infect open wounds of susceptible plants. From the point of view of the spread of plant diseases, therefore, cleanliness in a garden is of the utmost consequence. Stacked wood is particularly dangerous, since, all unobserved, the fungus may be copiously fructifying at the bottom of the stack. The safest course is to burn, or place under cover, all wood liable to harbour the parasite. *A. D. Cotton. Kew.*

HERACLEUM VILLOSUM.

This giant Cow Parsnip is, in the estimation of certain gardeners, nothing but a huge and ungainly weed. Other garden lovers regard it with a certain amount of pleasure, and consider it well worthy of a position where bold effects are needed, and, while most of these relegate it to the edge of a woodland, the moister, open spaces of the wild garden, or the banks of a lake or stream where the margins are not kept severely tidy, there are others who plant it in large groups or beds in the broad spaces of the pleasure ground, as shown in the accompanying illustration (Fig. 46). Heracleum villosum is a name far less known than H. giganteum, the latter being the one commonly used by gardeners. The huge and handsome leaves of this Caucasian Umbellifer are most effective, while the enormous branched and spreading heads of small, white flowers are so large that a few years ago a certain enterprising merchant advertised the plant as having flowers as big as a cartwheel. In congenial soils and positions H. villosum attains a height of ten feet, possibly more. I have looked down from the old walls of Chester on a big group of H. villosum and wondered what else could have been so effective in a moist, walled-in and semi-shaded position. It is frequently planted in thinly-wooded areas in public parks, and, if I remember rightly, it is so used in one of the parks at Southport. Even in the Royal Gardens of Kew this century-old introduction is not despised. When beginning to die down in late autumn it is not a pretty plant, but the same may be written of many other and daintier subjects. When in full growth and bloom, provided the plant has not been torn by wind-storms, Heracleum villosum is a grand subject for the positions indicated. *C. K.*

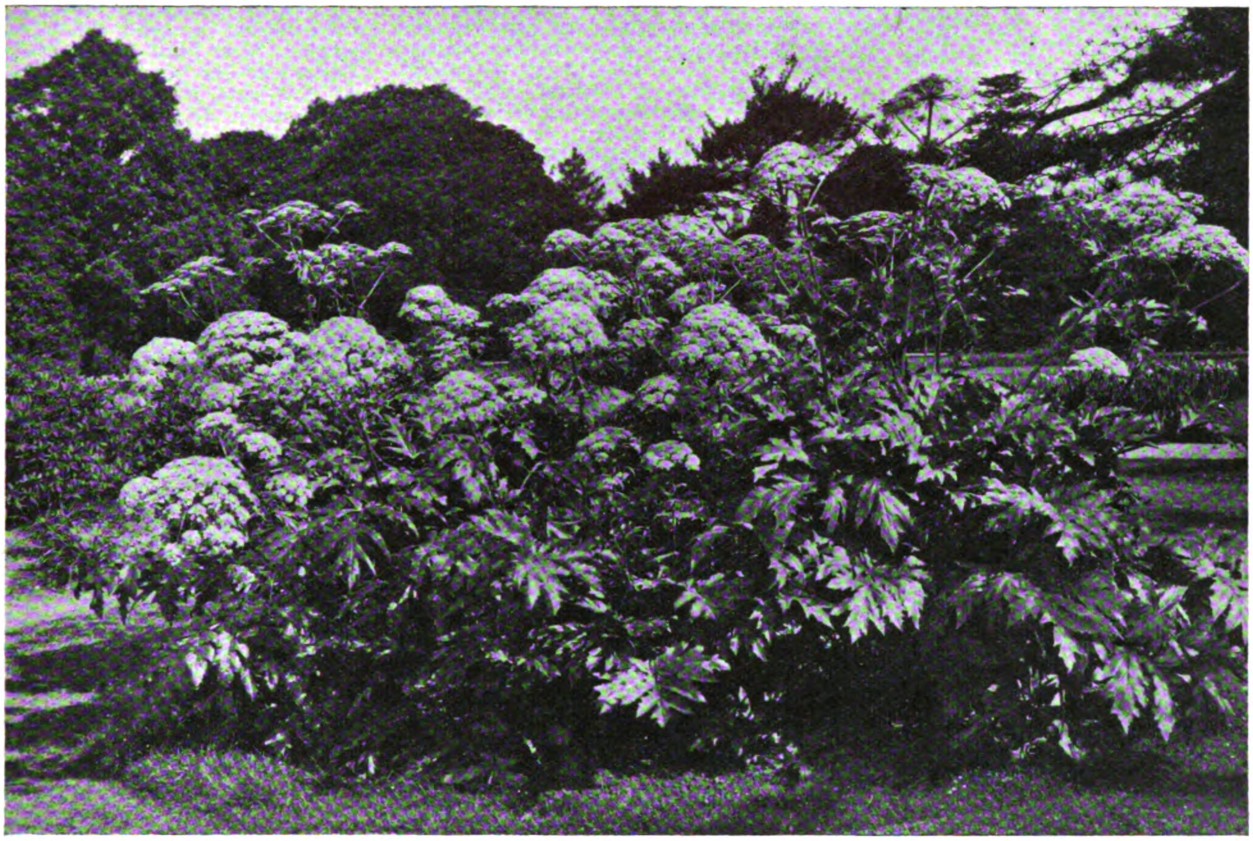

FIG. 46.—HERACLEUM VILLOSUM (GIGANTEUM).

NOTICES OF BOOKS.

Colour Planning of the Garden.

The late R. Hooper Pearson, whose untimely demise his many friends deplore, had the happy idea to plan a work on gardening in which prominence should be given to the colour value of garden plants. This plan has now been carried out by Mr. Tinley and his colleagues, Mr. Irving, Assistant Curator of Kew and Mr. Humphreys of the Edgbaston Botanic Gardens, Birmingham. The editor has also been fortunate in securing from the accomplished pen of Miss Gertrude Jekyll, an introduction on the art of planning the garden to secure the best combinations of colours. Whether or no the increasing attention which is being devoted to colour-gardening is likely to lead to neglect of the yet greater quality possessed by plants—that of form—would perhaps be rash to decide; nor does the answer greatly matter so far as this work* is concerned, for all will admit that those whose ambition it is to arrange their garden plants in the most pleasing colour combinations and contrasts should have the advantage of the experience and expert guidance of such masters in the art as those who have given us this volume. The volume opens auspiciously. None knows better how to plan a flower garden than does Miss Jekyll, and none is better able than is she to impart her knowledge. Miss Jekyll takes the reader through the garden year and shows him where the flowers of each season should appear, from the Winter Aconite and the Christmas Roses to the autumnal Asters. The first named she would plant in thin woodland or just within the spread of the branches of some deciduous tree and the Christmas Roses should appear in some ferny dell. With the later Lent Hellebores, the pink-flowered, bold-leaved Megasea ligulata speciosa should be associated and all may, failing the dell, run at the foot of a Nut avenue. The Crocuses shall be in drifts—Miss Jekyll will have none of those fairy-ring like clusters of Crocus about the trunk of a tree. Scillas and Chionodoxas may appear through the deep green of mossy Saxifragas or in the stone edging of borders. Occasionally, it is true, the aesthetic may seem to dominate the practical, as when the later Paeonies take up their stations in the Rose garden; in those gardens, at all events, where Roses, though they flourish, need much stirring of the ground and at least occasional spraying, the Paeonies would, we fear, lead to trouble; at least our own experience is that Roses do best when the ground is so free from other plants that it can be stirred as often as other work will allow. This, however, is after all a matter which depends on the kind of garden. In well and long cultivated, kindly soil, well drained yet retentive of moisture, the skilled gardener can do anything—or almost anything. But though every page of Miss Jekyll's introduction contains valuable advice, we must turn to the work of the other authors. Mr. Tinley's contribution on garden styles is all too brief and at times is apt to assume too much knowledge on the reader's part. Heather may be at home in the wild garden, but if, as is suggested earlier, a chalk pit may serve as the locus of the garden, it will not long remain at home there. For our part we think that the value of the work would have been enhanced if the Editor had been more generous in the space which he has accorded to himself. In any case some reference to the Italian style of gardening with Cypresses and sombre trees and few flowers—to give shade on hot, sunny days—should have been included, and even though it were thought that under our sombre skies shade is unwanted, still the garden of flowering shrubs should find a place here. For it more than any other point of the garden is at once the most beautiful and the most difficult to plan. After these introductions come a series of very beautiful photographs of garden scenes—mostly taken in famous gardens—and then, with a wealth of well-executed coloured plates, the colour catalogue begins. It is excellently well done, but only experience based on the use of it as a guide in garden planning may decide whether such a catholic survey of garden plants classified according to flower-colour will, as a matter of fact, greatly help the gardener in his planning. Convenient it undoubtedly will be to have the book for reference; but, fortunately or unfortunately, species are discursive things and garden varieties run into riots of colour. Where to place these rebellious things must have taxed the ingenuity of Messrs. Humphreys and Irving. We are inclined to suggest when another edition is in preparation that each colour section should be divided into a series of sub-sections—herbaceous border, rock and wall garden, etc., etc., and that the alphabetical lists should be distributed among the sub-sections. The praiseworthy desire to include all good garden plants would seem to us to militate against the every day usefulness of the book as a guide to garden planning. Useful, however, it certainly is, and gardeners will be grateful to the authors for the pains they have taken to help them in making their gardens yet more beautiful.

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* *Colour Planning of the Garden.* By G. F. Tinley, Thomas Humphreys, and Walter Irving, with 300 drawings in colour by Miss M. Walters Anson and an introduction by Miss Gertrude Jekyll. London, T. C. and E. C. Jack, Ltd., 1924. Price two guineas.

POTATO BREEDING.

The production of new varieties of the Potato is most readily effected by means of the true seed. However, variations within a variety, propagated vegetatively, do occur from time to time, and these may be isolated. In such a way it is possible, for example, to accumulate stocks of a white-tubered, a red-tubered, or a "bolter" King Edward; but none of these variations constitutes a distinct advance in the merits of the variety in question when all factors, including yield and maturity, are taken into consideration. Nevertheless, the variant character may be at times of such a nature as to enhance the commercial value of the variety, *e.g.*, the selection of russet-skinned tubers—because of their popularity—is of distinct advantage. "Bud sports" have been recorded as occurring in the Potato, but from the standpoint of the systematic production of new types, their occurrence is too rare. Selections of tubers from high-yielding plants would not seem to be efficacious for the purpose of improving healthy stocks. Thus sexual reproduction affords the only means of progress towards greater-yielding capacity, increased disease resistance, hardihood, and general utility.

The Potato breeder has one great advantage at the start; when he has obtained a new variety, there is no further question of fixing its characters; by the vegetative mode of reproduction, the seedling plant is carried on year after year without alteration. However, as will be seen, difficulties exist which are not easily overcome.

A study of the flower, its bright colour and occasional perfume, would lead one to conclude that the Potato is adapted for insect visits. However, whatever the conditions may have been in its original habitat, there is little, if any, natural cross-fertilisation in this country at the present time. Those varieties which bear natural fruit do so, therefore, as the result of self-fertilisation. Plant breeders have produced a number of varieties in which the pollen is sterile, or practically so, as for instance, Up-to-Date, British Queen, King Edward, Arran Chief, Epicure, Great Scot, Duke of York, and Golden Wonder. Indeed, most of our best varieties belong to this category. Closely associated—although not absolutely, as in the cases of Up-to-Date and British Queen—with the question of sterility of pollen is the phenomenon of diminished flower frequency. There are many desirable types which flower very rarely, and even then are practically always devoid of normal pollen. Conversely, many varieties, which flower profusely and bear viable pollen grains, are far from being desirable parents.

Selfing and Crossing.—The breeder has the choice of two types of seed, namely, that taken from naturally-fertilised berries or that produced by cross-fertilisation. It will be apparent that the second type offers by far the greater scope; by sowing selfed seed only, the choice of parents, both as regards quality and quantity, is very limited. Potato varieties have been elaborated through generations of cross breeding: the seeds of self-set berries will thus probably carry many characters in a blended condition, and will give rise to plants which differ amongst themselves and are distinct from the parent. A high percentage of natural seedlings of the varieties Abundance, America, Ally, President, Lord Rosebery, and Templar, however, are indistinguishable from the parent type; on the contrary, other varieties, including Majestic, give rise to seedlings showing great diversity. In the past many popular varieties have been produced from selfed seed, *e.g.*, Fluke, Victoria, Champion, and Maincrop, but all authorities are agreed that cross-fertilisation provides the greater amount of material from which to make selections. There is no proof at present of the allegation, made by some authorities*, that the Potato is highly sensitive to moderate in-breeding, and that the yield of natural seedlings is in any way less than in "crossed" seedlings. However, a serious disadvantage in the use of selfed seed is that faults of the parent are usually very prevalent in the offspring. The plants derived from seed produced by cross-fertilisation sometimes show resemblances to one or both parents, but the isolation of any seedling which possesses all the desirable qualities of the two parents is an extremely difficult matter, although the chances of obtaining it are increased in proportion to the number of seeds sown.

The Object of Breeding.

The aim of the Potato breeder is to produce new types of plants which, judged by all standards, are improvements on existing varieties. It will, therefore, be useful to discuss briefly the points of an ideal variety, keeping in view public prejudices and preferences, which, to a considerable extent, control the breeder's work.

(a) *Foliage.*—Foliage characters should be studied along with maturity. Common to all groups, however, there must be sufficient growth to cover the ground and "fill the drill"; marked "openness" must be avoided, as it allows weeds to grow up readily. The stems should not be too numerous or too thin. It is of great advantage if, other things being equal, the breeder can produce varieties in which the foliages cannot be readily confused with those of other varieties.

(b) *Disease Resistance.*—Varieties which show distinct susceptibility to specific diseases are of little value. In Britain, seedlings which are susceptible to Wart disease have little chance of success owing to the legislative measures taken to check the spread of this trouble. Generally speaking, all early varieties are susceptible to blight. This is not such a great fault, as, if the varieties are lifted early, they will probably escape infection. On principle, however, immunity to Wart disease and high resistance to all other troubles must be the aim of every breeder.

(c) *Maturity.*—There is a definite demand by the public for early, mid-season, and late varieties, all of which have special functions to perform. Individuals in one group should not be compared for yield with members of another; the yield of early varieties, for instance, can scarcely be compared with that of late varieties.

The Tuber.

(1) *Yield.*—Seedling varieties always have more numerous tubers in the first year than in succeeding years when like growth conditions prevail. Whether or not this phenomenon is connected with the different root systems is not known. Too many tubers are generally associated with a large percentage of small. One of the primary essentials of a good variety is the production of the largest yield per acre of marketable tubers. There must be a preponderance of ware tubers of marketable size and an absence of a large number of seed sets and chat tubers.

(2) *Shape.*—Amongst present-day varieties there exists a great diversity of shapes, ranging from the fine kidney of King Edward to the coarse round of Champion. At first sight it would appear as if any shape might do, but it has to be remembered that many varieties retain places on the market in spite of their shapes and not because of them. An ideal shape is that of Up-to-Date, which is flattened oval; however, there can be no radical objection to the kidney type or to the round Great Scot type. The eyes should not be too deep. Elongated and ungainly tubers never capture the public fancy.

(3) *Colour of Skin.*—Under present conditions, deep colouring is not desirable; such varieties are not popular with the consumer and they are difficult to lift in late autumn; moreover, diseased tubers are not so readily eliminated from coloured as from white varieties. On the other hand, russet tubers are popular, as also are some with distinct markings, such as King Edward. Pink is not so objectionable as purple. Varieties should have, therefore, white, yellow, or russet skins.

(4) *Colour of Flesh.*—In Britain white-fleshed varieties are in demand, although no exception is taken to a light lemon colour. Yellow-fleshed varieties—except in the case of earlies—are almost unsaleable in this country. Any varieties which have a tendency to form streaks of red or blue in the flesh should not be regarded with favour. The flesh should be firm.

(5) *Second Growth.*—Whether in the form of secondary tubers, runners or protrusions from the eyes, cracking or supertuberation, second growth is undesirable, and varieties showing such tendencies should be discarded.

(6) *Cooking Quality.*—The mature tuber should possess all those characters which go to make up "good quality." This can be estimated by a direct test. At the present stage there is not sufficient information regarding the actual composition of tubers to enable determinations to be made by chemical analyses.

(7) *Keeping Quality.*—Keeping quality is usually associated with maturity; early sorts do not keep so well as late ones, but their function is to serve the early market and, in consequence, this point need not be too seriously regarded. All late varieties, however, do not keep equally well. Tubers should not be prone to become diseased in the pits, and too early sprouting with the consequent depletion of food stored in the tuber, is undesirable.

(8) *Position of Tubers.*—The favourite Potatoes have generally the tubers bunched together at the base of the haulm, and varieties, *e.g.*, Templar, with long runners, are not popular. A well-bunched group of tubers facilitates digging at harvest and is better adapted for earthing up. *Thomas P. M'Intosh, B.Sc. (Agric.) Edinburgh*

(To be continued.)

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e.g., Baur E. *Grundlagen der Pflanzenzüchtung*, 1921.

HARDY FRUIT GARDEN.

APPLE MABBOTT'S PEARMAIN.

This Apple (see Fig. 47) ranks amongst the most useful dessert varieties for Christmas, for it is in season from November to January and is a suitable sort for growing in private establishments.

Although its origin is uncertain it appears to have been cultivated in the Maidstone district for very many years, where it is a very popular orchard variety.

The fruits are shown in the illustration natural size. The flesh is of fine flavour, tender, juicy and sweet. The skin is bright yellow, thinly suffused with red on the side next to the sun and speckled all over with grey russety-dots. Those who are planting Apples this spring may be recommended to include a tree or two of Mabbott's Pearmain.

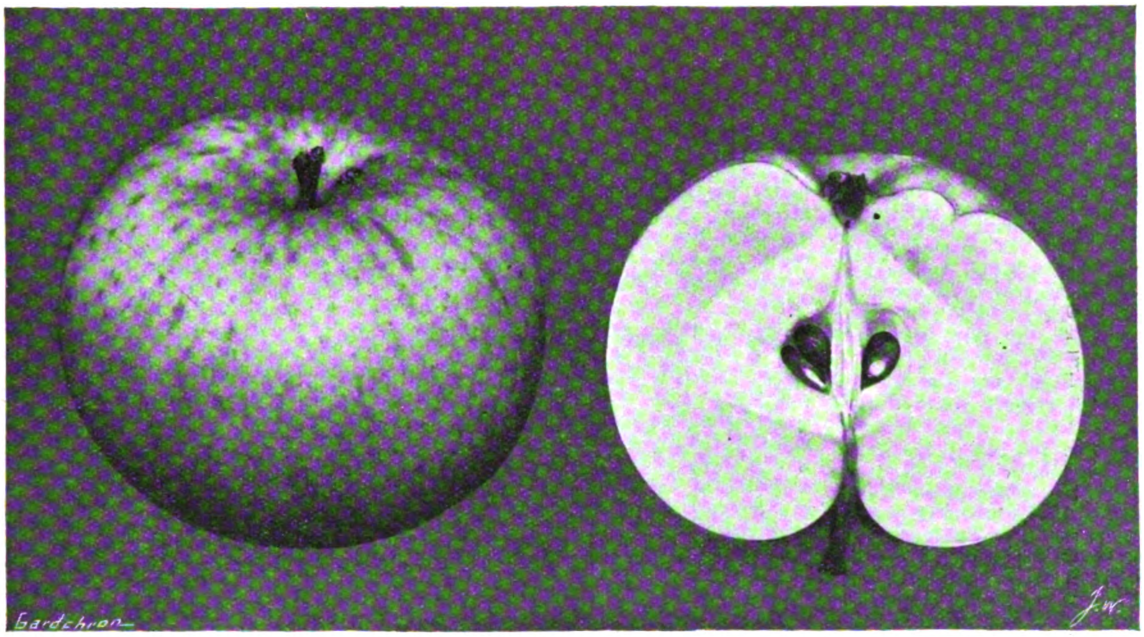


FIG. 47.—APPLE MABBOTT'S PEARMAIN.

THE FLAVOUR OF PEARS DURING THE PAST SEASON.

On the whole Pears are not so consistent in flavour as Apples. Much depends upon the amount of warmth and sunshine during their growth, together with timely gathering and proper storing of the fruits.

It was surprising to find during the past abnormal season what a high standard of quality was reached by many of the recognised good-flavoured varieties.

Amongst the Pears at Wisley which were outstanding in this respect, Colmar d'Été, Fondante d'Automne, Marguerite Marillat, Marie Louise, Seckle, Thompson's, Emile d'Heyst, Doyenné du Comice, and St. Edmund are worthy of notice.

On the contrary, a few varieties, including William's Bon Chrétien, Triomphe de Vienne, Beurré Hardy, Madame Treyve, Beurré Diel, and Conference fell very short of their usual flavour.

The fruits, with the exception of Doyenné du Comice which were from old standards in a different part of the garden, grew on bush trained trees on a rather cold soil, with a north-east aspect.

Examples of Pitmaston Duchess growing on a south wall were exceptionally well flavoured for this variety, while those growing in the orchard were very indifferent in this respect.

It would be interesting if others would give their experiences of this matter. *J. Wilson, Wisley.*

MARKET FRUIT GARDEN.

The year opened with gales and heavy rain, and throughout January showed no improvement on its predecessor in respect to weather. Local farmers say that they have never known the land so wet; and it certainly has not been in my experience. The soil was already so sodden that it could not absorb January's rainfall of 3.41 inches, and miles of low-lying land were flooded. My own place, being mostly hilly, escaped this trouble, except for one or two quite small areas; but such work as digging and planting has been possible only at times, and then under unsatisfactory conditions. Horse work on the land has been quite impossible; in fact, it has been difficult to find enough for the horses to do throughout the winter to keep them exercised. So far there have been no frosts severe enough to make the ground hard for carting over. It was a mild month almost throughout. Primroses were in bloom in sheltered hedgegrows, and a few Crocuses opened in the garden.

Winter Spraying Delayed.

Two attempts were made to carry out winter spraying, but little progress was made before rain put a stop to the work. However, enough was done to expose a few defects in the apparatus, which will now be in good order for uninterrupted running when conditions become favourable. It is important that spraying with carbolineum or tar distillate wash should be completed before long, as this can be done only whilst the trees are quite dormant, and already the buds are noticeably on the move.

Where this wash has been applied, the effect is very pleasing, the bark of the trees being left clean and polished. If the control of insect pests, by killing the eggs, is as good as I anticipate from what I have seen on other fruit farms in recent years, I think it would pay to spray the whole place every winter, in spite of the heavy cost of the work. This would relieve the grower of serious anxiety on account of insects during the early summer, and leave him free to contend with fungus diseases, which are not controlled by the winter wash. The outlay would certainly be considerable.

The carbolineum wash, diluted for use, costs round about 32s. per 100 gallons, rather more or less according to the quantity bought. With such expensive material economy in use is essential. This can be secured by employing a fine spraying nozzle and plenty of pressure. The nozzles used by most growers are adjustable, and some of them have also interchangeable discs giving apertures of various sizes. A remarkable saving of wash is made by fitting a disc with a small aperture. The ideal for economy in winter washing when the branches are bare, is a narrow cone of spray through a fine aperture applied with plenty of force. With this less is wasted on the air than with a wider cone of spray, such as is correct for summer spraying, when the trees are full of foliage.

Pruning.

Pruning is always interesting work, but particularly so when the trees are young enough to be still in the process of formation. Each variety is then a study in itself owing to differences in natural habit, which, curiously enough, can never be entirely disguised by pruning. Any gardener can tell a Worcester Pearmain, Allington Pippin, or Lane's Prince Albert, from the habit of the tree during the growing season, no matter what system of pruning has been adopted during previous winters. Although we cannot suppress the natural habit of the variety by pruning, we can modify it to some extent; and the object of any intelligent pruner is to correct undesirable tendencies. He will be careful to prune an upright grower to buds pointing outwards, and a tree of spreading habit to buds facing upwards and inwards. The need for thought on such points prevents the work of pruning from ever becoming monotonous.

For ease and pleasure in pruning it would be hard to beat Rival amongst Apples. The tree is naturally shapely. The shoots are clean and strong, and yet fruit spurs are formed freely. There is seldom any diseased wood to cut out, and the finished tree is a picture.

Other Apples that are pleasant to prune are Bramley's Seedling, Newton Wonder, and Early Victoria. The first and last of these form a striking contrast. Bramley's Seedling is a very strong grower and notoriously slow to come into bearing. It is not an easy matter to form spurs artificially; and it is generally agreed that the quickest way to bring the tree into bearing is to reduce pruning to a minimum. Nature knows much better than we do how to form fruit spurs if we give her the chance by leaving the stout shoots full length.

I have been pruning trees of Bramley's Seedling on which the main shoots were left untipped last winter. They have formed spurs naturally along almost the full length of the two-year-old wood. Early Victoria, on the contrary makes rather slender growths, though plenty of them, and is very quick to come into full bearing. It needs fairly hard pruning to keep it growing. Annual tipping of the main shoots and short pruning of the laterals does not throw it out of the fruiting habit. *Market Grower.*

VEGETABLE GARDEN.

EXHIBITION VEGETABLES.

VEGETABLES, though not perhaps the most attractive feature of shows, form a very important part of the exhibits, for gardeners and many enthusiastic amateurs and cottagers take the greatest interest in vegetables, and yet many exhibitors have a poor conception of what kind of produce appeals most to the judges, especially at village shows. For instance, they imagine that extra large Potatos are given preference; by all means select fully-grown tubers, rather larger than those that are considered best for the table, but let them be as even in size and form as possible, rejecting those with deep eyes, or defects of any kind. Cleansing only exposes such defects, but selected tubers are much improved by being carefully sponged and kept wrapped in paper until the morning of the show to prevent the skin becoming green; this applies to roots generally.

Carrots should be all of one size, clear-skinned, and of good colour, a rich red rather than yellow.

Turnips should not be too large; the most perfect specimens are those with small tap-roots but untrimmed, all other fibres being carefully cut away and the roots sponged clean. It should always be remembered that if judges have any doubt in awarding prizes the knife is used, and those found to be old or woolly in texture are passed over. Turnip-rooted Beet should be shown in exactly the same way as Turnips, and is the best type of Beet for early shows, but for later exhibitions long roots should be shown, as free from side roots, scars, and dirt as possible. Beets are generally cut by the judges and preference given to those of the deepest colour.

Parsnips are not usually included in early shows. The roots should be shown their full length, those that taper regularly being preferred.

Tripoli Onions are mostly seen at the early shows, but late in August fine bulbs of the Premier and Ailsa Craig types win the prizes.

Peas should be long in the pod, of good colour, and the pods packed with tender Peas. Judges not only open the pods but taste the Peas, and it is useless to stage Peas that are old and flavourless. The same remarks apply to Broad Beans, Runner Beans, and French Beans, the pods of which should be long, straight, and tender, the last quality being very important, for unless the pods snap readily they will win no prize. Peas and Beans should be straight and as nearly one length as possible with no small ones underneath.

Lettuces soon become flabby after they are cut, therefore they should be pulled up by the roots and surrounded by damp moss. *F. Jordan.*

(*To be continued.*)

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Geranium grandiflorum.—The description of this plant (p. 55) agrees with the plants in my garden here, but the illustration given (Fig. 31) appears to represent an example of one of the forms of G. ibericum, which I also grow here and which does not resemble grandiflorum in any particular, except that they are both Geraniums. G. grandiflorum resembles G. pratense in in appearance and growth, but the flowers have a large purple centre; G. ibericum, on the contrary, as can be seen from the figure, is not at all like pratense, as it has lobed, not deeply cut, leaves which are hairy and rather soft, and the flowers of my plant (possibly variety platypetalum) are of a dull violet purple.—*C. Nicholson, Hale End, Chingford.*

Onion Cranston's Excelsior and Ailsa Craig.—With reference to the controversy over the name of Cranston's Excelsior Onion on p. 15, Vol. LXXVII., I should like to state that I grew the variety when it was first sent out, more than thirty years ago and noticed then that there were both globular and flat-based bulbs. I never met the late Mr. Murray nor have I visited Culzean Castle, but what I believe Mr. Murray did, like a good many more, myself included, was to select the globular form and seed it, thinking he had a totally different Onion. Both shapes are found still, whether grown under the name of Ailsa Craig or Cranston's Excelsior. There is no doubt the latter was the first name, and the original raiser ought to be credited with the honour. *Gregor Roy, Halswell Park Gardens, Bridgwater.*

Bees and Apple Fertilization.—Seven years ago I became acquainted with some old Apple orchards which were interplanted with Cob-Nuts and Filberts. As the orchards were overcrowded, I was asked if the Nuts assisted the Apples in any way. I did not see it was possible, but since, according to a writer in the daily Press, where bees go in the early season they will go again and again later, there may have been two motives for the interplanting; viz., the securing of a crop of Nuts and the assistance of the bees in pollinating the Apples, though I am unable to say if this is so. If Apple trees were sprayed with anything bees disliked this would keep the insects away. Still another thought: are self-fertile and self-sterile varieties of fruit regularly so, or do they change in different seasons? That is, does a self-fertile sort become self-sterile, and a self-sterile one self-fertile. I trust I am not troublesome, but private gardeners have so little time in the flowering season to find out these matters. It is possible some scientific observer may kindly help with information. *J. E.*

—— Apparently from letters which have been published in these columns, and conversations with growers of fruit and keepers of bees, diversity of opinion on this subject is wider than I thought when the original note was written. So far as my information reaches me the pros. and cons. are about equally divided. One bee master with whom I have come in touch expresses the view that bees are not so valuable for fruit pollination on very heavy, cold soils as they are on lighter, warmer ones. That bees will avoid trees which have been sprayed with solutions obnoxious to them, as mentioned by Mr. Crowe on page 64, is well known, and has more than once raised the question as to whether the danger to bees due to dressing with poisons when trees are in blossom (a practice with which I do not hold for one moment) is not exaggerated. *W. T.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

THE National Chrysanthemum Society held its annual general meeting on Monday, February 2, at Essex Hall, Essex Street, Strand. In the unavoidable absence of the president, Sir Jeremiah Colman, through indisposition, Mr. E. F. Hawes was elected to the chair. The attendance was somewhat small, only three or four members being present in addition to the officers and committee, but one of these came all the way from Leicester and another from Cookham, to show their interest in the proceedings.

The Report of the Committee for the year 1924, together with the statement of accounts, were read by the Secretary. The former, as is usual, contained a brief statement of the work carried on by the Society during the year under review and laid special emphasis on the work of the Floral Committee, which considered the merits of no fewer than one hundred Chrysanthemum novelties and granted thirty-four First-Class Certificates and four Commendations. The exhibition of 1924 was a great success, and the takings at the doors on the two days amounted to £85 6s. 6d. As already notified, the exhibition for 1925 will be held at the Royal Horticultural Hall on November 5 and 6. Reference was made to the visit of Mr. T. W. Pockett, the eminent Australian raiser of Chrysanthemums, and to the visit of Mr. T. Stevenson to the Paris and Amsterdam exhibitions, where he represented the Society. The display of early-flowering Chrysanthemums at Wembley was given special prominence in the report, and the thanks of the Society was tendered to Messrs. Lowe and Shawyer, Messrs. Cragg, Harrison, and Cragg, and Mr. H. J. Jones, for their contributions of plants which enabled Mr. Bartlett to make a fine display in front of the Indian pavilion.

The Committee expressed gratification to Sir Jeremiah Colman, who had agreed to accept nomination for the presidency for one more year, but expressed deep regret that Mr. John Green, who has been hon. treasurer for many years, was compelled to relinquish office owing to advancing years. The warmest thanks of the officers and committee were extended to Mr. Green, with an expression of hearty good wishes, and, subsequently, Mr. Green was made an Honorary Fellow of the Society.

The accounts showed that the total income for the year was £308 16s., £94 17s. having been received from subscriptions, while the November show, including tickets and entrance fees, brought in a sum of £94 17s. Donors of special prizes contributed £49 11s. and affiliation fees came to £19 13s. The expenses of the November show, including prize money, amounted to £133 12s., printing and stationery came to £43 1s. 3d., while various other items included the affiliation fee of £2 2s. to the Chamber of Horticulture and £7 2s. 6d for postages. A balance of £62 1s. 3d. was carried forward.

The Reserve Fund account still stands at £50, while the surplus of assets over liabilities, after writing down the properties at the Royal Horticultural Hall and office, amount to £131 16s. 9d. Thus it appears that the National Chrysanthemum Society has made considerable progress and is in a better financial position than for many years past.

Sir Jeremiah Colman was unanimously re-elected president, and on the motion of Mr. Crane, seconded by Mr. Howe, Mr. D. Ingamells was elected to fill the post of hon. treasurer and he was also re-elected vice-chairman of Committee. Mr. E. F. Hawes continues as Chairman of Committee, Mr. C. Harman Payne as Hon. Foreign Corresponding Secretary, and Mr. C. H.

Curtis as Secretary and Editor. The retiring members of Committee were re-elected and Mr. J. Goddard, of Leicester, was appointed to fill a vacancy arising.

Reference was made to the services rendered by Mrs. Curtis on the occasion of the November show and it was agreed that she be asked to accept a small present as a token of the Committee's regard and esteem. Thanks to the officers and committee for services rendered during the past year were moved by Mr. Hatch, of Cookham, and seconded by Mr. Goddard, of Leicester, both of whom referred to the pleasure they had in attending the November shows, to the smoothness with which everything went off on those occasions, and the kindly attention which was always given to provincial members. A vote of thanks to the chairman concluded the proceedings.

ROYAL HORTICULTURAL.

February 10.—The near approach of spring was made apparent by the nature of the floral exhibits at Vincent Square on the occasion of the Annual General Meeting. Not only were there more flowers than a fortnight ago but they were more varied and of brighter character. The principal features were forced shrubs of various kinds, including Roses; early alpines, Primulas and Polyanthuses and Dutch bulbs. Besides the shrubs which received award, the Director of Kew showed a fine branch of Pinus Sabiniana bearing four large cones. There were several large groups of Orchids and some exceptionally fine fruits and vegetables.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Lt.-Col. Sir Geo. L. Holford, Gurney Wilson (Secretary), James O'Brien, Frederick J. Hanbury, C. J. Lucas, H. T. Pitt, Arthur Dye, H. G. Alexander, Chas. H. Curtis, S. W. Flory, Henry H. Smith, G. F. Moore, A. McBean, John C. Cowan, W. J. Kaye, E. R. Ashton, Fred. K. Sander, Stuart H. Low, T. Armstrong, C. Cookson, R. Brooman White and J. E. Shill.

First-Class Certificates.

Cypripedium Memoria F. M. Ogilvie var. Rex.—From Messrs. Armstrong and Brown, Orchidhurst, Tunbridge. The largest and most beautiful form of this grand hybrid. The large and perfectly formed flower of fine substance has a broad, round, white, dorsal sepal, with pale emerald-green base from which ascend heavily blotched lines of glossy maroon colour. The broad petals and lip have a honey-yellow ground tinged with chocolate-purple.

Cymbidium Goosander (*insigne* × *Merlin*).—From Lt.-Col. Sir George L. Holford, C.I.E., K.C.V.O., Westonbirt (gr. Mr. H. G. Alexander). A noble new variety with large flowers of fine shape; white with a pearl-pink shade, the clear white lip having a rose-purple front and margins to the side-lobes. A hybrid that is quite unique.

Awards of Merit.

Cymbidium Redstart, Crimson-lip variety.—A very fine rose-coloured flower with crimson margin to the lip and dotted red lines on the side lobes.

Cymbidium Butterfly, Westonbirt variety.—A fine flower of perfect shape; pale sulphur-yellow with dark red band and red spottings on the lip.

Cymbidium Warbler, Westonbirt variety.—A good white flower with slight blush tint and richly coloured markings on the lip.

Cymbidium Curlew, Westonbirt variety.—The plant shown had a fine spike of wax-like flowers, the lip having a band of purple in front and some red spotting.

Cymbidium Lapwing.—A very showy variety with fine flowers, the lip being white with crimson markings.

These five Cymbidiums were from Lieut.-Col. Sir Geo. L. Holford.

Miltonia William Pitt, Stamperland variety.—From Robert Paterson, Esq., Stamperland, Glasgow (gr. Mr. Merry). Several varieties of this grand Miltonia have secured Awards, but this is the richest of all in colour, the flowers being intense crimson-purple with a white base to the lip.

Cypripedium Robert Paterson (*Memoria F. M. Ogilvie* × *Eurybiades*).—From Messrs. Flory and Black, Slough. A very handsome hybrid with large and finely formed flowers, the broad dorsal sepal being white, heavily blotched with blackish maroon.

Cypripedium Gold Mohur (*Goliath* × *Lady Dillon*).—From G. F. Moore, Esq., Chardwar, Bourton-on-the-Water. A charming Cypripedium with yellow ground, the dorsal sepal bearing dark maroon blotches.

Cattleya Caroline (*Enid* × *Percivaliana*).—From Messrs. J. and A. McBean, Cooksbridge. A fine flower of the labiate type with rose sepals and petals and broad, purple, crimped lip.

Groups.

Lt.-Col. Sir Geo. L. Holford exhibited one of the grandest groups of Cymbidiums ever staged which gained him the Gold Medal, and a Silver-gilt Lindley Medal for his Orchid grower, Mr. H. G. Alexander. The group occupied a space of 220 square feet, and over one hundred grand specimens, all raised at Westonbirt, were included, the species also being represented by C. insigne and C. eburneum. About twenty distinct Westonbirt-raised hybrid Cymbidiums in several varieties were shown and all in superb condition.

Messrs. Sanders, St. Albans, were awarded a Silver-gilt Banksian Medal for a very fine and interesting group in which their fine strain of Cymbidiums was well represented, the new C. Louis Sander and C. Roger Sander ranking with the best. The central plants of their noble Miltonia Butterfly var. Apex and var. Eclipse had fine white flowers with deep maroon mask on the lip. Miltonia Sanderae bore two spikes of very beautiful flowers, and good Odontoglossums were noted. Among the species the curious Trias picta, Dendrobium Wardianum, and other Dendrobiums were noted.

Messrs. Charlesworth and Co. were awarded a Silver-gilt Banksian Medal for a fine group in which richly coloured Odontoglossums and Odontiodas were well displayed, the white forms being well represented by the beautiful xanthotes so well developed by Messrs. Charlesworth. Several examples of their new strain of Odontonia were also shown, indicating a development in which there are great expectations.

Messrs. Cowan and Co., Southgate, were awarded a Silver Banksian Medal for a goodly group, principally of Cymbidiums. The central plant was a grand example of their Brasso-Cattleya British Queen, and beside it were four very handsome plants of Cattleya Tityus. The Cypripediums included the still unmatched C. Harrisianum G. S. Ball's variety, with dark purple dorsal sepal, and the handsome C. Idina Lee's variety.

Messrs. Flory and Black, Slough, received a Silver Banksian Medal for a group in which the Cypripediums were well displayed, a fine novelty being C. S. W. Flory (Mrs. H. Jenkinson × Chardwar) and C. Robert Paterson (F. M. Ogilvie × Eurybiades), a grand hybrid. Good Cattleyas including some specially fine white forms were also shown.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, received a Silver Banksian Medal for an excellent group of Odontoglossums, Odontiodas, Cattleyas, etc. Good specimens of Cymbidiums were staged at the back, and among the species the violet-scented Dendrobium aureum was noted.

Messrs. J. and A. McBean were awarded a Silver Banksian Medal for a group of finely grown hybrids, the best of which were their new Cattleya Caroline and C. Trianae J. Gurney Fowler, a grand rose-coloured flower with large purple lip, and which is one of the finest forms of the species. It has previously received an Award. Among the Odontoglossums were many finely coloured hybrids and a specimen of O. Pescatorei with a six-branched spike.

Other Exhibits.

Baron Sir H. Schröder, The Dell Park, Englefield Green (gr. Mr. J. E. Shill), showed a stand of the fine typical Calanthe Baron Schroder with spikes of thirty to forty rose and purple flowers and all differing widely from the white form he showed at the last meeting. Sir Jeremiah Colman, Bt., Gatton Park, Surrey (gr. Mr. Collier), showed the fine Cymbidium Erin (Gattonense × grandiflorum) with a fine spike of large emerald-green flowers, the white lip bearing crimson spotting; and a selection of his pretty Laelio-Cattleya Champagne, with flowers yellow and-copper red with purple lip of varying shades.

R. Gerrish, Esq., Milford Manor, Salisbury (gr. Mr. Sorrell), sent his finely coloured Odontoglossum Leander which had previously been given an award, but was now in improved condition, the rich, violet-purple of the flowers being well displayed by the white margin and base. G. F. Moore, Esq. (gr. Mr. Page) showed several fine Cypripediums.

Floral Committee.

Section A.—*Present:* Messrs. H. B. May (in the Chair), J. F. McLeod, Arthur Turner, H. J. Jones, J. M. Bridgeford, Donald Allan, W. Howe, E. R. Janes, M. C. Allwood, G. W. Leak, J. B. Riding, F. Streeter, F. G. Cousins, W. B. Gingell, D. Ingamells, D. B. Crane, and W. P. Thomson.

Section B.—*Present:* Messrs. Gerald B. Loder (in the Chair), James Hudson, G. Reuthe, George Harrow, E. H. Wilding, W. B. Cranfield, A. Bedford, Reginald Cory, E. A. Bowles, R. D. Trotter, A. Williams, F. J. Preston, G. Yeld, Amos Perry, R. W. Wallace, T. Hay, R. C. Notcutt, and Clarence Elliott.

First-Class Certificate.

Prunus Amygdalus praecox.—A robust and well-flowered branch of this early-flowering Almond was shown. It usually flowers about a fortnight earlier than the species, and is also sometimes grown as Prunus Amygdalus persicoides. Shown by the Director, Royal Gardens, Kew.

Awards of Merit.

Galanthus byzantinus.—A large-flowered Snowdrop of uncommon appearance. The broad, green leaves have pale green channels. The spreading floral segments are cupped and fairly substantial. The perianth is relatively small, well-formed, and white variably marked with green. Shown by C. T. Musgrave, Esq., Hascombe Place, Godalming.

Freesia "Lemon Queen."—A desirable "coloured Freesia" of good size. The well disposed spike is made up of large flowers with pointed segments which are lemon colour splashed with pale orange. The blooms are pleasantly fragrant. Shown by the Rev. Jacob Jacob.

Freesia "Orange King."—The blooms are much more fragrant than is usual in the coloured variety, and added to its delicious fragrance is well-rounded form, good size and rich colouring. Shown by the Rev. Joseph Jacob.

Prunus pseudocerasus.—The chief garden value of this hardy tree lies in its earliness of flowering, though it is not nearly so showy as the Almonds. The somewhat congested branch on show was not in the best condition, but apparently the Committee was acquainted with it at its very best hence the award. Shown from the University Botanic Gardens, Cambridge.

Salix cinerea Mendemii.—A decorative variety of the Grey Willow. The shoots were freely studded with large, silky catkins, and apart from its value to the planter, it makes a handsome cut shrub for house decoration. Shown by the DIRECTOR, Royal Gardens, Kew.

GROUPS.

Mr. L. R. RUSSELL staged an interesting collection of Nepenthes, suspended over other interesting stove plants. Such Nepenthes as Henryana, Morganae, formosa, Sanderiana, mixta and rufrescens were especially well "pitchered." There were also several Anthuriums, Franciscea calycina, Azalea indica varieties and plants of Prunus triloba. (Silver Banksian Medal).

Carnations of good quality and in goodly quantity were shown by Messrs. ALLWOOD BROS., who included several vases of mixed varieties of their perpetual border hybrids, and Topsy, Laddie, Edward Allwood of the greenhouse perpetual-flowering sorts, amongst which was also a vase of Butterfly, a new fancy variety noteworthy chiefly for its uncommon claret coloured markings. (Silver Banksian Medal). Mr. C. ENGELMANN showed Red Laddie, Donald, Mrs. Hamilton Fellows and other useful varieties. (Bronze Banksian Medal). Adjoining their Carnations, Messrs. STUART LOW AND CO., staged well-flowered plants of Camellias, Acacias, Cyclamens, and other greenhouse plants. (Silver Banksian Medal).

A number of well grown plants of frilled varieties of the Caledonian strain of greenhouse Cyclamen were again shown by Mr. J. W. FORSYTH, and on the present occasion the ordinary type of flower was represented. These all illustrated desirable strains and first-rate cultivation. (Silver-Gilt Banksian Medal).

Although not extensive the groups of forced Roses were welcome and interesting. Mr. ELISHA J. HICKS included goodly vases of Climbing Lady Hillingdon, Isobel, Clovelly, Coral Cluster, and Rosa Hugonis (Silver Banksian Medal). Mr. GEORGE PRINCE showed the old favourite Fortune's Yellow, Padre, Emily Gray, and Victoria; the last named variety is most delightfully fragrant (Bronze Banksian Medal).

Rhododendrons from the open, shown by Messrs. R. GILL AND SONS, included many trusses of R. Cornubia and seedlings of R. arboreum. They also showed flowers of Hippeastrum aulicum and Primula The Jewel (Silver Banksian Medal).

The exhibits of alpine plants, either as separate collections or in association with hardy shrubs, were fairly numerous, and generally of considerable interest. Messrs. J. CHEAL AND SONS had a pleasant arrangement appropriately planted (Silver Banksian Medal). Messrs. WM. CUTBUSH AND SON had a low rockwork arrangement, merging into a bright shrubbery, which included Wistaria sinensis, Azalea mollis, and A. indica varieties, while in the rock garden were various Crocuses and dwarf Japanese Azaleas (Silver Banksian Medal). Mr. H. HEMSLEY associated several Hellebores and various shrubs with alpines (Silver Banksian Medal), while Mr. G. REUTHE had his customary collection of uncommon shrubs and alpines (Silver Banksian Medal).

Viola gracilis, a pretty little double-flowered Daisy, Rhododendron Nobleanum, and the graceful purple-flowered Sisyrinchium grandiflorum were shown by Messrs. WATERER, SONS AND CRISP (Silver Banksian Medal). Saxifrages of such as S. Burseriana varieties, S. kestoniensis, and S. kewensis, Iris reticulata and Primula Juliae were shown by Messrs. R. TUCKER AND SONS (Silver Banksian Medal). Mr. G. G. WHITELEGG displayed various shrubs of value for the rock garden, including many dwarf Japanese Azaleas and alpines (Silver Banksian Medal).

Excellent batches of Iris reticulata and I. reticulata Cantab. were arranged with dwarf Lavender by the Rev. H. ROLLO-MEYER (gr. Mr. T. P. Izzards), Walton Rectory, Hertford (Silver Banksian Medal).

Bronze Banksian Medals were awarded to Messrs. BAKER'S for shrubs, including Viburnum Carlesii, Rhododendron praecox, and alpines; to Messrs. BARR AND SONS for a delightful collection of spring shrubs and border flowers. Narcissus Cyclamineus, Irises, Polyanthuses, Crocuses, and Anemones were all of value; to Messrs. CARTER PAGE AND CO. for Crocus Susianus, Cyclamen Atkinsii album and other hardy varieties, Muscari, and early Iris; to Messrs. PRICHARD AND SONS, who showed a low rockery planted with Ericas, Saxifrages, Primulas, and other spring flowers; to Mr. F. G. WOOD, who also made an interesting rock garden; to Messrs. SKELTON AND KIRBY, whose group included Prunus Pissardii; to Mr. G. A. MILLER for a charming collection of his well-known Polyanthuses, Blue Primroses, and Narcissus Golden Spur; and to Miss HEATHCOTE for a large collection of fresh and fragrant Violets.

An exceedingly interesting collection of flowers of many Crocus species was arranged by E. A. BOWLES, Esq., Middleton House, Waltham Cross (Silver Lindley Medal).

A useful group of bulbs grown in bowls of fibre was arranged by Messrs. R. H. BATH, LTD. Various Hyacinths, Tulips, Narcissi, Irises, and Crocuses, all displaying good, sound bulbs and skilful cultivation. Messrs. SHEPPARDS LTD., showed a small group of Crocuses planted in fibre and backed by low-growing Conifers. Messrs. REAMSBOTTOM AND CO. staged a good collection of Anemone St. Brigid, and the Misses Hopkins had a small rockery with early Tulips and other flowers.

Besides the floral exhibits there were paintings of flowers and garden scenes of much more than average merit. Miss Willmott showed some forty or fifty paintings of Cape Pelargoniums, drawn by Mr. Champion Jones. These were noteworthy both as faithful representations and for delicacy of treatment. Miss M. Walters Anson had a number of paintings of Orchid blooms which found much favour with the experts and charmed others.

Narcissus and Tulip Committee.

Present: Messrs. E. A. Bowles (in the Chair), G. Churcher, W. Poupart, G. W. Leak, Rollo Meyer, Alfred W. White, F. H. Chapman, J. W. Jones, W. B. Cranfield, G. Monro and Robert W. Ascroft (Hon. Sec.).

This Committee had little work to do. A Bronze Banksian Medal was awarded to Messrs. Bath for an exhibit of Daffodils, and the members agreed that a letter of sympathy be sent to the relatives of the late Mr. J. K. Ramsbottom.

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix (Chairman), W. Poupart, H. S. Rivers, P. C. M. Veitch, Geo. F. Tinley, H. V. Taylor, S. B. Dicks, W. Giles, E. Laxton, F. Jordan, A. Bullock, E. Neal, Ed. Beckett, J. C. Allgrove, H. Markham, W. H. Divers, A. Metcalfe, and Jos. Cheal.

Messrs. SUTTON AND SONS were awarded a Silver-gilt Knightian Medal for a collection of vegetables. The quality of the various kinds exhibited was very good for a February show, and they included some remarkably fine Onions, the biggest of which were of the Selected Ailsa Craig variety. Other sorts of Onions shown were A.1, Brown Globe; these also were exceedingly good; Ailsa Craig, Main Crop, Improved Reading, Long Keeping, and Bedfordshire Champion. Carrots were represented by excellent roots of New Red Intermediate, Matchless, Scarlet Champion Horn, and Early Gem. Other root crops included were Tender and True Parsnips and Celeriac. In the centre of the exhibit was a group of variegated Kales, and these gave a touch of colour to the collection. Baskets of Golden Ball Lettuces and some splendid Seakale of the Ivory White variety were also worthy of mention.

Messrs. DOBBIE AND CO. were awarded a Silver Knightian Medal for an exhibit of Kales, Leeks, and Onions. International Prizetaker Leeks were of outstanding size and quality; others of the Lyon variety were also very good. There were big, sound bulbs of Ailsa Craig and Golden Globe Onions.

Messrs. GEORGE BUNYARD AND CO., LTD., were awarded a Silver-gilt Hogg Medal for a collection of Apples, the various kinds being all of remarkably fine quality. They included such useful late sorts as Orleans Reinette, Gascoyne's Scarlet Seedling, Striped Beefing, Bismarck, Christmas Pearmain, Brownlee's Russet, King's Acre Pippin, Sturmer Pippin, and Sandringham.

Messrs. T. RIVERS AND SON showed an exhibit of Oranges, but their exhibit was not so imposing as usual, owing to there being no space on the floor to display the large pot trees which they are accustomed to exhibit. There were, however, many smaller trees of such sorts as Bittencourt St. Michaels, Telde St. Michael's, Nonpareil St. Michael's, Malta Oval, and Excelsior; also the Grape Fruit and Citrus medica, all these trees bearing ripe fruits. Of the gathered fruits the most notable were Silver (Plata) Orange, a thin-skinned, small variety, but of excellent flavour and full of juice; Long Orange, and Naval. (Silver-gilt Hogg Medal.)

Mr. J. C. ALLGROVE showed the very richly-flavoured Pear Mrs. Seden, which was raised from Bergamotte Esperen crossed with Seckle. The flavour is exceptionally good, although the fruits are not of very imposing appearance, and rather on the small side.

ANNUAL MEETING.

LORD LAMBOURNE presided at the Annual Meeting held in the Lecture Room at 3 o'clock, and he was supported by the other members of the Council. After the minutes of the preceding annual meeting had been read and one hundred and sixty-five new Fellows elected, Lord Lambourne presented the annual report. He stated that he had very great pleasure in moving the adoption of the report, which gave some idea of the enormous amount of work carried out by the Council during the past year. It showed, as a concern, great prosperity, and the Fellows were shareholders getting dividends past belief. The Council was still busy and likely to be with the question of the new hall, which was proving a thorny and difficult subject. They were fully aware of the inconvenience the present building caused to the Fellows, and the Council intended to have, with the least possible delay, a hall worthy of London and of those who will go there. There was a new idea in connection with the proposed Hall, and that was to change the present R.H.S. Hall for the building erected by the Office of Works as a museum; and this would leave the whole of the vacant land available for the erection of a very large Hall.

He was aware that opinion was divided in regard to keeping Chelsea Show open for five days and traders, especially Orchid growers, whose plants would necessarily be exposed for five days, had serious objections, whilst there was also the great extra expense to the R.H.S. to be considered, and only time will prove whether the new venture is a success or not. The Council had conceived the idea of holding an amateur show with the special object of meeting the wishes of those who wanted to see more amateur exhibits. There were some, he was aware, who thought a larger hall might be engaged for this special show, but this also was in the nature of an experiment and they would see whether circumstances warranted the very great expense which would be entailed by going elsewhere.

They parted from the three members of the Council with deep regret, for all had done yeoman service for the Royal Horticultural Society; they included Mr. Reginald Cory, a very generous benefactor to horticulture and one who was of the greatest use on the Council and a most regular attendant; Mr. Gerald Loder, who also was a regular attendant and made a careful examination of all questions brought before the Council; he would like specially to refer to the valuable services he had rendered in connection with the Library Committee. The third retiring member was Mr. James Hudson, who had served for twenty-five years as a member of the Council. They all regretted his departure, for he was of a kindly nature, conciliatory, and possessed a valuable knowledge of practical gardening, so that his opinion had been most valuable and he could assure them that Mr. Hudson left with the good wishes of all his colleagues.

Lord Lambourne stated that the work of the Council was getting extremely heavy and that there was much before them in the future. He called on the Treasurer, Sir William Lawrence, to give some particulars of the finances.

Sir William started by paying a great compliment to Mr. Frank Reader, the cashier, whom he said was one of the most devoted servants the Society possessed. He was also pleased to know that Mr. Harper, Senr., the Auditor, was with them again. With reference to the accounts he stated that at the end of 1923 they were enabled to put £15,000 to the reserve fund. This year he was glad to say they had also placed a similar sum to reserve, and in addition they had increased their capital account by building cottages at Wisley at a cost of £4,200, of which a considerable amount was provided for in last year's payments; they also held a mortgage on the Secretary's house. He was glad to say that the profits of Chelsea Show were more than in 1923, and they lost less on account of the Holland Park show. The Society expended over £400 in prizes in connection with the special fruit show. Receipts from hall lettings had diminished, due to Wembley exhibition and other causes. They had, said Sir William, some very heavy expenditure to meet in the future at Wisley in connection with certain measures of reconstruction of the administration there and in connection also with the memorial to the late secretary (later in the afternoon it was stated the memorial would take the form of a new pair of hammered iron entrance gates with suitable supporting columns in masonry). With regard to the new Hall if they were enabled to carry out their proposed scheme of exchange it would be twice the size of the present one. They had £63,000 available in the general reserve fund to expend on the Hall, and also some £7,000 from the depreciation account of the present one, which would make a total of £70,000 available for the building. It was impossible, he said, to give an accurate estimate of the cost of the new building, but it would be somewhere about £100,000, and there would be a ground rental of £1,200 a year to meet. Sir William seconded the adoption of the report, and before any comment was made the Chairman called on Mr. Cuthbertson to make a statement on the new policy at Wisley.

Mr. W. Cuthbertson then presented his statement. He said: "Two years ago a good deal of criticism of the Wisley Garden appeared in the press and I endeavoured to answer some of it from this platform. I remember the work of the Society was not challenged at that annual meeting, and I further remember that my colleagues and I on the Wisley Committee were wise enough not to accept the lack of vocal criticism as a vote of confidence. The scheme of work under which we have been working at Wisley was adopted by the Council in 1914 Professor Sir I. Bayley Balfour and Sir F. W. Keeble were largely responsible for it. A few years ago new blood began to flow regularly into the Council under an arrangement which has never been made public. That arrangement is this—it was agreed among ourselves that retiring Members of Council should not be eligible for re-election for one year. New Members of a Council usually think it is their duty to 'get a move on.' I did so in my time. Naturally some of them turned their eyes to Wisley. After ten years it was quite proper to suggest that the policy at Wisley should be examined. About a year ago a Commission was appointed to report on the scientific work being done there. That Commission consisted of three well-known men of science—Dr. Bateson, Professor Farmer and Mr. A. D. Cotton. In due time they reported to the Council pointing out what they considered some defects in our system and suggesting where alterations and improvements in our working policy were desirable. When that report came before the Council it was remitted for detailed consideration to a special sub-committee of the Council—I will give you the names as they should inspire confidence—Sir Wm. Lawrence, the Treasurer (Chairman), Mr. E. A. Bowles, Mr. C. Nix, Mr. H. B. May, Mr. E. Bunyard, Mr. C. Musgrave, and myself, as Chairman of the Wisley Committee, with Dr. Hill, Director of Kew, as adviser and consultant.

The Council widened the reference to that special committee to include the work of the Garden and enable it to consider Wisley as a whole. That Committee reported recently and their report was unanimously adopted by the Council. Its recommendations are now in process of being carried out after consultation with the Director, Mr. Chittenden, who only on one point disagreed with the report, otherwise he is as anxious as any of us to increase the value and importance of Wisley.

The Balfour-Keeble policy of 1914 is not altered except in so far as their views of research work in the laboratory are modified. It is felt that at present the duty of the Royal Horticultural Society at Wisley is to be a little less ambitious in its scientific aims than the 1914 programme foreshadowed, while still keeping before it the idea of 'making Wisley the foremost Horticultural Institution in the world.' I believe it is that to-day. Two new appointments will shortly be made under what I may call the 1925 revision. The Director will in future be more like the head of any great establishment (business, university, or otherwise), and to relieve him, and we believe make for greater efficiency, a head of the Laboratory will be appointed and a head of the Garden. If these new men are what they should be it is proposed that they get a very great amount of freedom within their own departments. The programme of work will be arranged with the Director and approved by the Committee on behalf of the Council, and it will be the new men's duty to carry it out and get results of which the Director and the Society will be proud.

One great change was brought about a year ago in the method of working the Wisley Committee. Previously the Committee used to go round the garden on their monthly visit as a full Committee, just as the Council goes round the big shows to view the exhibits. You know how that it is done. The tour round the Garden was done in exactly the same way. The director was leader and a few, three or four, keen men kept close in touch with him, but the other two-thirds of the Committee came along after in a go-as-you-please style. I made a remark two years ago that 'you could not garden by a committee,' and that is a perfectly correct statement. A year ago the Wisley Committee of about twenty was divided into five Sub-Committees who now go to special sections of the Garden under a chairman who carries a notebook. The entries in these notebooks are brought before the full Committee after lunch, and are in nine cases out of ten approved, initialled by the Chairman, and passed to the Director for attention at the proper time.

I have referred to certain names as giving the Fellows confidence. Let me give you the names of the members of these sub-committees:—(1) Rock garden: Messrs. Bowles, Hanbury, Musgrave; (2) Shrub, wood, and wild garden: Messrs. Cory, Loder, and McLaren: (3) Fruit and vegetable: Messrs. Nix, Lobjoit, Bunyard, and Jordan; (4) Herbaceous ground and Roses: Messrs. May, Dykes, Bilney, and Sir W. Lawrence; (5) Laboratory: Dr. Hill, Dr. Rendle, and Sir W. Lawrence. Mr. Nix is largely responsible for the farm management, in conjunction with the Director.

There is an innovation proposed which I hope to see carried out next year in connection with the School of Horticulture. Many of us have thought that some provision should be made for lads who have served an apprenticeship to practical gardening. They are usually the sons of people who cannot afford to send them to Wisley. The new proposal is that a beginning should be made with five such lads, if they can be found, who would work for a living wage in the garden for two years and have the advantages of the classes and lectures which would help them in their future career as gardeners. Practical gardeners, enlightened by science and interested in the literature of their trade, are the great need of the day. The other day a remark was made to me by a comparatively new member of our Council—Mr. Bunyard. He said: 'It is an undoubted honour to sit on the Council of the R.H.S., but it is a work of renunciation.' I entirely agree with Mr. Bunyard.

I could speak of many other things about the work at Wisley, but time will not permit. I think the Council should take the Fellows more into its confidence at the annual meeting (that, of course, is a personal opinion). If I was a dictator, I should put up the Chairman of every Committee to tell you in a five minutes' speech about the work of his Committee. Let the interest in all the Society's work be widened. The future of the R.H.S. is largely bound up with two things—its fortnightly meetings and its great shows, and Wisley. At Wisley a large portion of our annual income is spent, and its future will yield a rich harvest of honour to the Society if the policy of 1914, which has just been reviewed and largely confirmed, is carried out wisely, and the balance is held fairly between the many phases of horticulture. In due time I believe its work must be extended to include one or more sub-stations in the north.

A word about ourselves. In all our working let there be frankness, let there be as little intriguing as possible—though a little is sometimes necessary, no doubt—but the Committee and the Council rooms are the places in which to thrash out problems of policy, and if this is done with a single eye to advance the interests of British horticulture, we need have no anxiety about the future of the Society or Wisley."

The Rev. J. Jacob stated that he was glad to learn from the President that the new policy of the Council was to take the Fellows into their confidence, and for that reason he proposed that they should have a special Autumn General Meeting when they could give the Council a little fatherly advice. He had one serious criticism to make, and that was that the Council does not apparently possess the confidence of the judges who are appointed at the shows, for their decisions are open to be upset by the Council. He appealed to them to appoint judges whom they would have every confidence in and then there would be no need to upset their decisions.

Mr. Brunton said he was glad to know from Mr. Cuthbertson's speech that there was a move to get in touch with northern horticulturists, and he proposed that they have a conference with some of the northern horticultural societies, to see how this could be better achieved.

The chairman reminded the Rev. J. Jacob that a general meeting of Fellows could be called at any time and with regard to Mr. Brunton's question he stated that they had already appointed a committee to deal with the question of northern trial grounds.

Lord Lambourne said he would like to take the opportunity to propose that a vote of sympathy be sent from the meeting to the heir of Lord Grenfell, whose death they all regretted. This was unanimously agreed to.

The next proceedings were the presentation of the Victorian Medals of Honour, the Veitch Memorial Medals and the Cory Cups.

A member proposed that one of the fortnightly meetings should be held at Wisley and excursions arranged so that a greater number of Fellows would have an opportunity of seeing the Society's Gardens. The suggestion apparently did not appeal to the meeting.

In proposing a vote of thanks to Lord Lambourne, Mr. R. Wallace stated that the small amount of criticism showed that the Fellows had the fullest confidence in the Council for which reason he urged them to go ahead with the subject of the new Hall and to build one worthy of the Royal Horticultural Society and of British horticulture.

Obituary.

J. K. Ramsbottom.—It is with inexpressible sorrow we record the tragic and untimely death of our highly-esteemed colleague, Mr. J. K. Ramsbottom, Assistant Managing Editor of *The Gardeners' Chronicle*. In our issue of January 31, just as he was sailing for the United States, we published his portrait, together with a brief account of the work he had accomplished, especially in connection with the control of the Narcissus eelworm. We have little to add to that appreciation. He left us a little more than a fortnight ago in the highest of good spirits, and was looking forward to his mission with great pleasure and interest. By his death the horticultural world has lost a brilliant and useful young man, who, at the age of thirty-three years had his feet firmly set upon the ladder of fame and success. For a long time to come his many friends will sadly miss his cheery ways and charming personality. Death occurred as the result of injuries received from a fall from a high window in a New York hotel. We offer our deepest sympathy to his sorrowing, widowed mother, sister, and three brothers, to whom the loss has come with appalling suddenness. Our own loss is so grievous that we cannot yet fully comprehend it.

GARDENING APPOINTMENTS.

Mr. F. E. Hare, M.B.E. previously Gardener for eighteen years at Blyth Hall, Coleshill, Warwickshire, as Gardener and Steward to Sir Alexander Maguire, Hoole Hall, Chester.

Mr. F. J. Bright, previously Gardener at Marylands, Bentley, Hampshire, as Gardener to Lady Yatwyth, Sandhurst Lodge, Wellington College Station, Berkshire.

Mr. B. G. Newnes, for the past two years Gardener to Colonel Lowther, D.S.O., at Wilton Castle, Redcar, Yorkshire, as Gardener to Mrs. B. Meakin, at Seabridge Hall, Newcastle, Staffordshire.

CATALOGUES RECEIVED.

Seeds.

Chas. Tilley, 117, Western Road, Brighton.
James and Geo. H. Matthews, Harold Wood, Essex.
Kay and Co., 3, Goodmayes Road, Goodmayes, Essex.
J. Forbes, Ltd., Buccleuch Nurseries, Hawick, Scotland.
Wm. Power and Co., Waterford.
Morle and Co., Ltd., 150, Finchley Road, N.W.

Fisher, Son and Sibray, Ltd., Handsworth, Sheffield.—Farm Seeds.
Sutton and Sons, Reading.—Farm Seeds.
Morle and Co., 150 Finchley Road, N.W.—Liliums, Begonias, Azaleas, etc.

MARKETS.

COVENT GARDEN, Tuesday, February 10, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum cuneatum per doz.	10 0–18 0	Cyrtomium	10 0–15 0
elegans	10 0–12 0	Erica melanthera, 48's, per doz.	21 0–30 0
Aralia Sieboldii	9 0–10 0	— —60's, per doz.	8 0–10 0
Araucarias, per doz.	30 0–42 0	Hyacinths, in boxes— —white, pink and blue, per doz. spikes	3 0– 4 0
Asparagus plumosus	12 0–18 0	Marguerites, white, 48's, per doz.	18 0–30 0
—Sprengeri	12 0–18 0	Nephrolepis, in variety	12 0–18 0
Aspidistra, green	36 0–60 0	—32's	24 0–36 0
Asplenium, per doz.	12 0–18 0	Palms, Kentia	30 0–48 0
—32's	24 0–30 0	—60's	15 0–18 0
—nidus	12 0–15 0	Pteris, in variety	10 0–15 0
Cacti, per tray, —12's, 15's	5 0– 7 0	—large 60's	5 0– 6 0
Crotons, per doz.	30 0–45 0	—small	4 0– 5 0
Cyclamen— —32's	36 0–48 0	—72's, per tray of 15's	2 6– 3 6
—48's	24 0–30 0		

Remarks.—Large quantities of flowers are arriving from Guernsey and Scilly in good condition, and they meet with a fair demand. This is also true of the consignments of flowers from French growers. In the English market there is a big display of Tulips in numerous varieties, including excellent blooms of W. Copland, Farncombe Sanders, Tea Rose, and Clara Butt. Richmond Roses are coming more freely, but it will be a week or two before the new crop of other varieties is marketed. Arum Lilies, also Lilium longiflorum (Harrisii), have fallen in value during the past few days. Amongst foliage plants, Maidenhair Fern has been the shortest supply for some time past.

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Beans, Guernsey, per lb.	2 6– 7 0	Greens, per bag	1 0– 2 0
—Worthing	6 0– 7 0	Horseradish, per bundle	2 0– 2 6
—Madeira, per box	3 0– 6 0	Leeks, per doz. bundles	2 6– 3 6
Beets, per cwt.	4 6– 5 0	Lettuce, per dozen	1 6– 2 0
Cabbage, per tally	6 0– 8 0	—Outdoor	2 6– 3 0
Canary Island Tomatos	14 0–20 0	Mushrooms, cups	2 0– 3 0
Cauliflowers, per doz.	2 0– 4 0	—broilers	1 3– 1 9
Forced Mint, per doz.	4 0–10 0	Onions, Valencia, per case	14 0–16 0
Celery, best, washed, per bundle	2 6– 3 0	Parsnips, per cwt.	4 0– 6 0
—Second	0 8– 0 9	Potatos, Canary Island, per case	12 0–14 0
Chicory, per lb.	0 3– 0 4	—Spring crop	16 0–20 0
Carrots, per cwt.	3 6– 5 0	Potatos, per ton— —Dunbar	230 0–240 0
Cucumbers, each	2 0– 3 6	—King Edward	210 0–240 0
Dutch Onions	10 0–12 0	—White	90 0–200 0
Endive, per doz.	2 0– 3 0	—New Guernsey lb	1 0–0 10
Batavia, per doz.	3 0– 3 6	Rhubarb, Forced, per doz.	2 0– 2 6
English Asparagus— —Finest	7 0– 8 0	Savoys, per tally	7 6–12 6
—Best	4 0– 5 0	Seakale, per punnet	2 0– 2 6
French Asparagus— —Paris Green	7 0– 7 6	Spinach, per bushel	3 0– 4 0
—Lauris	8 0–10 0	Sprouts, bag	3 0– 4 0
		Sweet Potatos	3 0– 4 0
		Turnips, per cwt.	4 0– 5 6

Remarks.—A little more briskness has been noticeable during the past week, many subjects moving with more freedom. Cape fruits have gone out well, the Peaches, Apricots, Plums, and Pears being generally in good condition. English hothouse Grapes are still popular in spite of the competition with choice fruits from South Africa. The Apple trade is not quite so good, only first grade fruits are really wanted, medium and small Apples, either home grown or imported, are a slow trade. Forced Beans from Worthing are rather more plentiful, but still selling at high prices. Hothouse Potatos are meeting a good reception. Mushrooms have been arriving in larger quantities and prices are easier. Cucumbers show some increase in quantity, but quotations are firm. Madeira Beans have arrived in better condition, but prices are lower. Forced Asparagus is cheaper owing to competition with French-grown Asparagus. Trade in old Potatos remains steady with ample supplies on offer.

GLASGOW.

The wintry weather of the past week had a depressing influence on markets. Supplies in each section were well maintained, but the quieter feeling in the retail trade was reflected in the smaller turnover, and, as a natural consequence, prices moved downwards and made little or no recovery towards the close.

Cut flowers were cheap and business was very quiet, particularly on Thursday. Tulips declined to 6d. and 9d. per bunch, but the following prices represent a fair average for the week:—Bartagon, 1/- to 1/6 for 6's; Coplands and Ibis, 10d. to 1/3; Murillo, Prince of Austria, and Flamingo, 9d. to 1/2; Haarlam, 1/- to 1/2; Tea Rose, 8d. to 1/-; Voorbank, 1/- to 1/4, and Couronne d'Or, 10d. to 1/6. Daffodils were offered in fine condition, but Golden Spur only made from 12/- to 14/- per doz. bunches; King Alfred, 18/- to 24/-; M. J. Berkeley, 14/- to 16/-; Pearl White, 5/- to 7/-; Ornatus, 8/- to 12/-; Pheasant's Eye, 9/-, and Narcissus, 9/- to 10/-. White, pink, and blue Hyacinths varied from 7d. to 1/- per bunch, Lilac, 3/- to 6/- doz. sprays; Lilium Harrisii, 10/- to 12/- per bunch, and Arums, 4/6 to 6/6 per dozen. Carnations declined from 6d. to 1/- per dozen, medium blooms being 2/- to 2/6 and specials 3/6. Prunus averaged from 1/6 to 2/- per bunch English Violets, 6d. to 1/6, French Violets, 2/-; Mimosas, 3/- to 6/- per cane; Snowdrops, 1/- per doz. bunches; Smilax, 1/6 to 2/-, and Asparagus, 1/- to 1/6. Pot plant were firm. Hyacinths at 2/- each, Daffodils, 1/6 to 2/-, and Azaleas, 3/6.

The marked falling off in the imports of Apples had a steadying effect on prices which were quotably unchanged. Owing to heavy arrivals of Oranges from Jaffa, Palermo, Castillon, Burriana, and Valencia, values closely approximated to pre-war levels. Cases of 300 and 360 sold at 9/- to 10/6; 240, 11/6; 200, 12/- to 13/-; 420 (large), 18/-, and 714, 16/-; Jaffas, 14/- to 16/-, and Sunkist, 18/- to 20/-; Mandarins 420, 9/6 to 15/-, and Murcia Lemons 300, 12/6 to 15/-; Seville Bitter Oranges realised 18/-, and Palermo 11/. Winter Nelis Pears averaged 32/-. Gros Colmar Grapes remained steady at 2/9 to 4/- per lb. for English and 2/6 to 3/- per lb. for Scotch.

An outstanding feature of the vegetable market was the smart reaction in Onion prices. The scarcity which was most pronounced in the last six weeks caused a material advance, but with the arrival of two cargoes and the prospects of a third this week values again favoured buyers, cases of 4's falling to 14/-, 6's to 14/6, and Dutch to 11/- per bag. Large English Leeks brought 6/- per dozen bundles. Spring Onions realised 7d. to 8d. per bunch, and Madeira Beans 7/- to 7/6 per box.

ANSWERS TO CORRESPONDENTS.

Apples, Plums, and Cherries for Esthonia: *A. J.* It seems very unlikely that English varieties of these fruits will withstand your severe winters or be suitable for your conditions. If, however, you wish to make the experiment, the following varieties, named in order of ripening, should suit your requirements:—Dessert Apples: Worcester Pearmain, James Grieve, Rival, Allington Pippin.; Plums: Czar, Victoria, Monarch; Cherries: Governor Wood, Kentish Bigarreau, Bigarreau Napoleon. All of these are first-class market varieties.

Correction. Our attention has been drawn to a printer's error in our reference to Messrs. Sutton and Son's Employees Pension scheme on page 50. The retiring age should be sixty-five years instead of fifty-six years.

Galls on Yew Shoots: *R. O. B.* The Yew shoots have been galled by the insect Cecidomyia taxi. Such galls are common on Yew in many parts of the country, but apart from their disfiguring effect they are of little moment, for they do not seriously injure the trees on which they occur. Big buds on Hazel are caused by Eriophyes avellanae, an insect closely related to the Black Currant Mite, Eriophyes ribis.

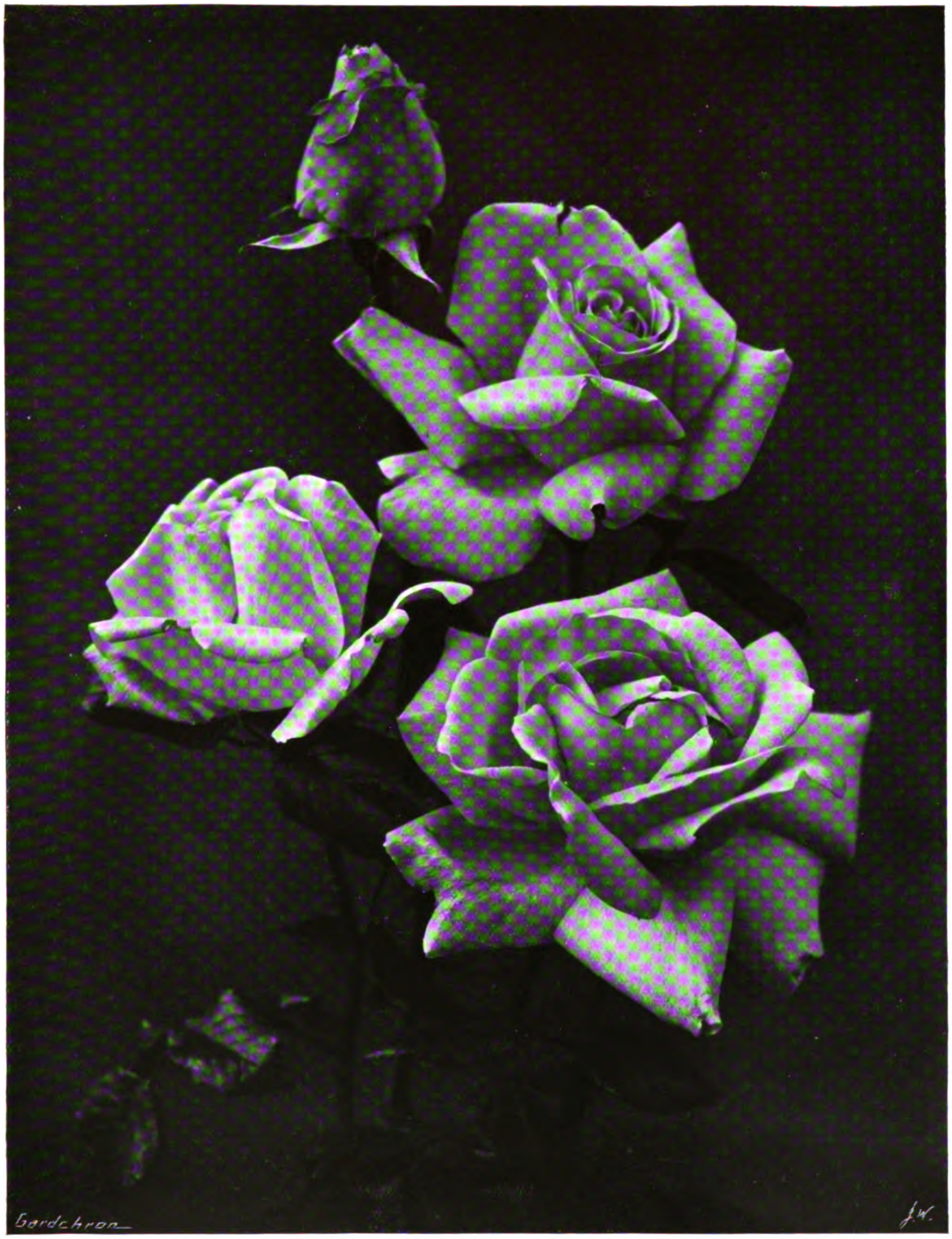
Names of Plants: *C. B.* 1, Cestrum elegans; 2, Maranta bicolor; 3, Zebrina pendula; 4, Selaginella Watsonii. *H. L. O.* 1, Pteris cretica variety; 2 and 3, not recognised, send when in flower; 4, Dracaena Godseffiana; 5, Euonymus latifolia argentea variegata; 6, Euonymus latifolia aureopicta; 7, Abutilon Sawitzii; 8, decayed; 9, Androsace species; 10, Opiopogan Jaburan; 11, Pelargonium Lady Plymouth. *G. E. D., Leeds*: 1, Cerasus lusitanica; 2, not recognised; 3, Daphne species; 4, Azalea species; 5, Genista species; 6, Statice latifolia. *A. E. B.* Ornithogalum thyrsoides (Chinkerichee).

Diseased Pelargonium Leaves: *C. H. D.* No fungus disease was present on the leaves. The spots suggest scalding, or possibly a leaf miner, but the material was too dried up to permit us to be definite on this point.

Violet Leaves Diseased: *W. K.* The leaves are affected with Violet leaf spot, caused by the fungus Ascochyta violae. Very badly diseased plants should be burned, and fresh stock obtained from a new source, planting the runners in ground as far away from the old bed as convenient. The disease may be kept in check by spraying the plants with potassium sulphide at a strength of half an ounce in two gallons of water. This specific turns white paint black, and should not be allowed to come in contact with painted woodwork.

Communications Received.—H. W.—Reader.—W. D.—F. G. P.—H. C.—H. C. B.—R. W.—T. C.—S. W.—A. B.—J. W.

Supplement to The GARDENERS' CHRONICLE.


Gardchron
J.W.

ROSE SHOT SILK.

THE
Gardeners' Chronicle
No. 1991—*SATURDAY, FEBRUARY* 21, 1925.

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SUPPLEMENTARY PLATE.
Rose Shot Silk.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 40·1.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street Covent Garden, London, Wednesday, February 18, 10 a.m.: Bar. 29·8, temp. 45°. Weather, Sunny.

Wisley. Fellows and friends of the Royal Horticultural Society will have found an especial pleasure in perusing the Report of the annual meeting (see p. 118). When you have difficulties, and in these days who has not? there is nothing like "thinking aloud" to discover a way of solving them. It clears the mind, and if done artistically, wins sympathy—a famous mental emollient. Mr. Cuthbertson, in presenting his statement, wisely employed this mode of clarifying thought. He did not disguise from himself that Fellows of the Society are looking to the Council for the enunciation of a programme which shall aid the achievement of the aspiration uttered when the new laboratories at Wisley were built "that Wisley may become the foremost horticultural institute in the world." The decisions which he announced should go far toward effecting the realisation of that aspiration. Chief of these decisions is that which relates to the appointment of a head of the Wisley garden. Such an appointment has long been recognised as essential by all who have followed the history of the garden. Horticulture is and must always remain an art. Science will, as it acquires apposite knowledge, lend more and more powerful aid to the art of horticulture; but when science has said its last word, the art of horticulture—aided greatly and greatly simplified—will remain. Therefore, a garden which is to be the expression of the craftsman's skill, an exemplar of all that is best in garden cultivation and design, must have as a responsible head a man who can not only grow plants but who can make and develop a garden. With the wonderful resources, natural and acquired, which Wisley possesses, and with a reasonable measure of freedom, the right kind of head gardener should be able to do during the next ten years even more than has been done already to make Wisley the most interesting garden in the temperate parts of the world. This appointment we regard as the essential thing. One less important is the announcement that a head of the Laboratory is to be appointed. For our part, we have no quarrel with the remark made by Mr. Cuthbertson that the Council is inclined to take a somewhat more modest view of the scope of research to be carried out at Wisley than it did at the time of the planning of the Laboratory. We have no inclination to dispute the wisdom of this more humble policy—because it will not work out like that. If the head of the Laboratory is a first-rate man and has sufficient support from the Council to gather around him promising and enthusiastic young men, Wisley will in time do great research work, and we are sure that when signs of this work are evident there will be no lack of encouragement from the Council. If, on the other hand, the man appointed is second-rate, so also will the work be, and it need hardly be said that second-rate work is not good enough for Wisley or for any other public institution. The third announcement made by Mr. Cuthbertson will be welcomed no less than those to which reference has just been made. It is to give the garden lad a chance. The proposal, which has our fullest sympathy, will require careful consideration with respect to details. We are inclined to think—and we speak with some knowledge of the subject—that the scheme will work best and produce the greatest benefits to all participants if the Council appoints the lads for a probationary year and keeps them at work during that year in the garden, paying them, of course, a living wage. Then, of those lads who show industry and aptitude, a number should be chosen as student gardeners, who should, during the following year, have all the privileges of students, should give all the necessary time to scientific study, follow all the courses of lectures and practical instruction, and during "term time" be absolved from all garden work whatsoever. Smatterings of science are worse than none. Young lads seldom possess strength and energy for the simultaneous prosecution of two arduous tasks—manual work of gardening and long hours in laboratories—and the hours in laboratories must be long if sound knowledge and not smattering is to be acquired. These, however, are details which will doubtless be considered by the Council before it casts the scheme into final shape. We wish it well, and believe that the Council has done wisely in recognising the unspoken claims of gardeners to an opportunity to grow wise in their craft. One word more, on the subject of the garden committee. Mr. Cuthbertson's sketch of stragglers "trailing casually behind" the enthusiastic members making inspection is true. The newer way of dividing the committee into sections is a better way. Perhaps the best way would be for the committee to pass a self-denying ordinance and agree to meet, say, twice a year, except when special business required transaction. Committees are generally fertile in improvised ideas, and the ideas are generally sterile. With guidance, exercised reticently and periodically, the man on the spot will probably work better than with a constant, solicitous mothering by a committee. Here, again, experience will tell, and it may well be that with the manifold activities now being undertaken at Wisley more frequent meetings may be necessary; and yet, on reflection, we think not.

Benmore Estate Gifted to Forestry Commission.—At the close of his presidential address to the members of the Edinburgh University Forestry Society on Thursday of last week, Mr. John D. Sutherland announced that Mr. Harry George Younger had offered the Forestry Commission his estate of Benmore, extending to close upon 10,000 acres, as a national gift. He further explained that an arboretum and a comprehensive collection of rare plants and shrubs was already there and, in addition, over a thousand acres of the most interesting and varied woodlands and plantations in Scotland. The gift has solved the problem of a demonstration forest which was as necessary to the student of forestry as the hospital is to the embryo medical man. It may also lead to an important development in connection with a proposal to establish a national botanic garden in Scotland. The original idea was to establish the garden on the neighbouring estate of Glenbranter which was recently acquired from Sir Harry Lauder by the Forestry Commission, but there are many who consider that the Benmore estate will be a much more suitable and convenient site for a memorial garden to the memory of the late Sir Isaac Bayley Balfour. Benmore is situated in Argyllshire, about one-and-a-half miles from the head of the Holy Loch, and about six miles from Dunoon, which can be reached in little over one hour from Glasgow and two hours from Edinburgh. The woods on the estate were planted between 1874 and 1883, and consist of an assortment of Douglas Fir and Thuja, with some Scots Pine and Larch. A feature of the arboretum is a specimen of Japanese Larch which was brought as a seedling from Japan forty-five years ago, and now measures sixty-five feet in height and sixteen and a quarter inches in girth. The residence is beautifully situated, with a wide expanse of lawn. The patriotic owner is a son of the late Mr. Henry Younger and is chairman of Messrs. William Younger and Company, Ltd., brewers, Edinburgh. He was a director of the North British Railway for many years, and unsuccessfully contested Edinburgh constituencies on two occasions in the Liberal Unionist interest. He has now taken up his residence in Devon, and it was only in the previous week that Mr. Greenlaw, the head gardener, and the staff removed south.

Tomato Leaf-Spot.—The leaf-spot disease, though it occurs in this country, is not one of the most serious to which the Tomato is subject. The reason for our relative immunity from the disease is probably to be found in the relatively high temperature, fifty-nine degrees, at which the leaf-spot fungus, Septoria lycopersici, produces spores. In the northern states of America, on the contrary, the disease is serious, and is said to cause an annual loss amounting to a quarter of a million tons of Tomatos. Spraying with Bordeaux mixture, though efficacious, is too costly where large acreages are grown in the open. A method of control which has given good results* consists in procuring large, stocky plants raised in southern districts and planting them out so that they become well-established before the middle of June—that is, the time when temperature conditions are favourable to the development of the fungus. Although the practice has proved successful in checking leaf-spot, it has had as a sequel the introduction from the southern States into the middle Atlantic and middle Western States of not a few other diseases, as, for example, wilt and root-knot. In view of this, the author of the *Bulletin* therefore draws the conclusion that a system of plant certification is needed. For our part, we should have thought that the conclusion is erroneous, and that it should be possible for raisers and growers to arrange for the supply and receipt of seedling "clean" plants without the intermediation of inspectors. It is a nice question, and one which deserves careful and dispassionate consideration, whether the plant pathologist has or has not done more good than harm to the advancement of the practice of horticulture. This, however, is too large a theme to attach to a brief note.

Lawrence Medal.—The Lawrence Medal was instituted by the Royal Horticultural Society in 1906 to celebrate the late Sir Trevor Lawrence's twenty-one years' tenure of the office of President of the Society. It is struck only in gold and only one specimen is awarded annually. The award is made directly by the Council and never to the recipient in either of the two previous years. Up to the present time no individual or firm has received more than one Lawrence Medal; it has been awarded for superb exhibits of Orchids (four times), Ferns, Irises, Tulips, Chrysanthemums, stove plants, rock plants, fruits, and vegetables (twice). The 1924 award was made to the Hon. Vicary Gibbs, V.M.H. (gr. Mr. Edwin Beckett, V.M.H.), Aldenham House, Elstree, for the magnificent collection of vegetables exhibited at the Holland Park Hall last autumn.

"Geo. Monro" Concert.—The twenty-sixth Bohemian concert held under the auspices of the "Geo. Monro" Concert Committee took place at the Queen's Hall, London, on Thursday, the 12th inst., and was the most successful of the series, there being a record attendance. A splendid programme of vocal and instrumental music was rendered by well-known artistes and the band of His Majesty's Grenadier Guards. The tables in the arena were decorated with flowers presented by Messrs. Lowe and Shawyer, whilst the front of the stage was made beautiful with flowers and plants by Messrs. Wills and Segar. From the proceeds of the concert last year a sum of £14 14s. was allocated to charieties, including £6 6s. to the Gardeners' Royal Benevolent Institution.

New Head Forester at Balmoral.—The announcement is made of the appointment of Mr. Johnstone Edwards as head forester to His Majesty the King on the Balmoral estates. A native of Newburgh, Fifeshire, Mr. Edwards has had considerable experience of the duties he will have to undertake. He began his forestry education on Thirlmere estate, the property of the Manchester Corporation, under his cousin, Mr. A. W. B. Edwards, where he showed very marked ability in mastering his profession. After a few years at Thirlmere, Mr. Edwards proceeded to Scotland, where he acquired further experience on several large Scottish estates. On the outbreak of war he joined the Scots Guards and had many thrilling experiences overseas. On demobilisation he was appointed head forester on the Castle Kennedy estates, the property of the Earl of Stair. Mr. Edwards will have very important duties to perform, his charge containing some of the finest timber growing in Scotland, and including the famous Ballochbuie forest.

Mr. A. C. Bartlett.—The newly appointed Secretary of the Royal Gardeners' Orphan Fund is a Devonshire man and was born near Bideford where his father was then gardener. At a comparatively early age the family moved to Exeter and young Bartlett was educated at Hele's Science and Art School, where he was an exhibitioner. Although it was originally intended that he should follow a business life his love for gardens and gardening became so great that he adopted the horticultural profession and in later years became a very competent gardener and estate manager in Cornwall. He remained at Pencarrow for many years, where he had ample opportunities for increasing his already wide knowledge of trees and shrubs, as the collection at Pencarrow was particularly extensive. This experience has stood him in good stead, for as an expert in matters pertaining to trees and shrubs, his advice is frequently sought by owners of estates in many parts of the country and also in the Channel Isles. For several years Mr. Bartlett has been Secretary of the National Sweet Pea Society (a position he will continue to occupy) and under his care the membership has shown material increase. He was also Secretary of the National Dahlia Society for some time and on his retirement from that post he was awarded the Dean Memorial Gold Medal as a token of appreciation of his services. Mr. Bartlett is an old Kewite who never loses an opportunity of impressing upon promising young men the desirability of spending a couple of years in the Royal Gardens at Kew as part of their horticultural education. As a frequent contributor to these columns he has been well known to readers of the *Gardeners' Chronicle* for many years. As a young man Mr. Bartlett gained some fame as a footballer, while resident in Berkshire, and during his lengthy stay in Cornwall he gained more than local fame as a rifle shot. For several years he was a member of the Cornish VIII and Cornish XX teams and in 1910 he won the grand Aggregate Gold Badge, Silver Cross and Bronze Medal for shooting, and he still holds the Cornwall County long range record. His many friends throughout the country will join in wishing him every success in his new appointment.

MR. A. C. BARTLETT.

Shropshire Floral Fête.—The annual exhibition of the Shropshire Horticultural Society will be held at Shrewsbury on Wednesday and Thursday, August 19 and 20. Upwards of £1,200 will be offered in cash prizes, in addition to ten Coalport China Trophies, which have been especially designed for this occasion by the Coalport China Company, and all of these are to be won outright. Schedules may be had on application to the Secretary, Mr. W. G. Brazier, The Square, Shrewsbury.

Scotch Seedling Potato Trials.—The Board of Agriculture for Scotland has issued its report on the Potato trials at East Craigs last year, where the varieties tested were those provisionally recommended by the Potato Synonym Committee in 1923. Severe frosts occurred about the middle and end of September, causing premature ripening in the early and late maincrop varieties. This effect was so marked that the varieties in these two classes matured between three and four weeks earlier than in 1923, and this earlier ripening is probably reflected in the comparative yields. Several of the varieties were more or less severely affected by Leaf-roll and Mosaic disease, and the nature of the season was favourable to the spread of late blight. The following varieties have been considered of sufficient merit to justify a final and extended trial this year:—No. 279, Mackelvie; No. 282, Mackelvie, Arran Consul; No. 257, Mackelvie, Duke of Perth, and Incomer. The following are abbreviated notes on the varieties:—No. 279, Mackelvie—As early as Snowdrop and should prove a valuable immune substitute for Sharpe's Express and Eclipse. This variety is very resistant to blight, markedly surpassing most of the other varieties in this respect. Great Scot—Notably resistant to virus diseases; a large cropper but very susceptible to blight. No. 282, Mackelvie—Healthy at first but showed twenty-five per cent. slight Mosaic disease towards the end of the season; very resistant to blight. Arran Consul—Healthy at first but between fifty and sixty per cent. showed slight Mosaic disease towards maturity. Notably the most resistant sort to late blight, being practically unaffected. Occupies along with Great Scot the leading position in yielding capacity. Strathmore Glory—Showed about twenty-five per cent. slight Mosaic and fifty per cent. medium Mosaic; very susceptible to blight. Dupplin Castle—Contracted Wart disease. Wonderful—Showed at the start of the season about fifteen per cent. slight and fifteen per cent. medium Mosaic, and later developed severe Mosaic on a few plants and slight Mosaic on most. Duke of Perth—A very vigorous sort, practically all the plants being healthy at first; developed a little slight Mosaic at the end of the season; attractive kidney shaped tubers and very resistant to blight. No. 257, Mackelvie—Showed about sixty per cent. slight Mosaic along with extensive streak-like spotting. Kerr's Pink—Very poor stock; many plants had severe Mosaic or leaf roll. Incomer—Very vigorous; all the plants were healthy at first; severe Mosaic on fifteen per cent. and slight Mosaic on most of the remainder towards the end of the season; attractive tubers and very resistant to blight.

Presentation to Mr. G. W. Cummins.—The hall of the Croydon Borough Hospital was recently the scene of a happy little gathering. The occasion was the leave-taking with Mr. G. W. Cummins, the popular and highly-esteemed head gardener of the hospital, who has recently retired on account of ill-health. For the past fourteen years Mr. Cummings has been head gardener at the hospital, and that they were years of happiness to himself and those with whom he came in daily contact was amply shown at this function. All the members of the staff of the hospital were present, and Mr. Levy, in making the presentation of a handsome barometer and timepiece, for which all had contributed, said how much they all regretted the cause of Mr. Cummins' retirement, and expressed the hope that he would have a complete recovery of health and enjoy a happy and long retirement. Mr. Eagling referred to the happy relations which had always existed between Mr. Cummins and the staff of men under his charge. Mr. Cummins thanked them all very much, both for the gifts and for their kindness. He said he regretted having to leave the hospital gardens after fourteen happy years of service, and mentioned that his son, Mr. A. R. Cummins, had been appointed head gardener in his stead. Mr. G. W. Cummins is well known in the district, as for many years he was gardener to the late Mr. Alfred H. Smee, at Wallington, and honorary secretary to the Beddington, Carshalton, and Wallington Horticultural Society, whose flower shows and fêtes on August Bank Holidays used to attract very large crowds of visitors.

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* United States Department of Agriculture. Department *Bulletin* 1288. Washington, D.C. 1924.

Ayrshire Potato Crop. — Early Potato planting in South Ayrshire commenced on Thursday last on the farms of Jameston and Little Turnberry. Wet and stormy weather interrupted operations, but a brief spell of drying winds enabled a start to be made about the usual period. About eight thousand acres in the Carrick area are planted annually with the variety Epicure.

Appointments for the Ensuing Week.—Tuesday, February 24: Royal Horticultural Society's Committees meet; Newcastle and District Horticultural Mutual Improvement Society's lecture. Wednesday, February 25: Wimbledon and District Gardeners' Mutual Improvement Society's meeting; Mitcham, Tooting, and District Horticultural Society's meeting; Sheffield Chrysanthemum Society's meeting. Thursday, February 26: Association of Economic Biologists' provincial meeting at Edinburgh (2 days); Royal Botanical Society's meeting.

"The Gardeners' Chronicle" Seventy-five Years Ago.—*Dendrobium speciosum.*—At the last meeting of the Horticultural Society ,a plant was produced which illustrates in so striking a manner the true meaning of high cultivation in gardening as to demand from us special notice. The plant in question was the well-known Dendrobe (Denbrobium speciosum), an Orchid whose low price enables most growers to possess it, and whose peculiarities of constitution generally defy all efforts at making it blossom; the few have succeeded, the many have failed, although among the latter are to be reckoned some of the best gardeners in the world. And it is not a little singular that the two who have managed it best have been country clergymen; the Rev. J. B. Huntley was among the first to succeed with it, and the Rev. C. Fox Chawner, of Bletchingly, produced the specimen on which these remarks are founded. The plant in question was about twelve feet in circumference, reckoning from the ends of the flower racemes, of which it had thirty-five, each averaging about seventy-five flowers, of the most delicate cream colour, veined with violet. Therefore, about 2,625 of these flowers were expanded or ready to expand at the same time. It is impossible to do justice by words to the appearance of such a specimen, nor is it easy even to imagine the extent of its beauty. It might be said to be a fountain of flowers. *Gard. Chron., February* 23, 1850.

Publications Received.—*The Principles of Vegetable Gardening.* By L. H. Bailey. Price 20s. net; *Manual of Tree and Shrub Insects.* By Ephraim Porter Felt. Price 16s. net. Macmillan and Co., St. Martin Street, W.C. 2. *Agricultural Progress*, Volume 2. Ernest Benn. Ltd. 8, Bouverie Street, E.C. 4. *Die Gartenpflanzen im Alten Agypten.* Hoffmann und Campe Verlag, Berlin, *Moderne Probleme im Gartenbau.* Verlag der Osterreichischen Gartenbau-Gesellschaft, Wien, Vienna.

THE ROSE GARDEN.

ROSE SHOT SILK.

(See Supplementary Plate).

It is not often that a Rose becomes so popular as Shot Silk has before it is distributed to the public. In colour, form, habit, and persistence it is a splendid variety and certain to win greater favour than ever now that it may be grown in gardens. In the nurseries of Messrs. Alex. Dickson and Sons at Newtownards, where it was raised, it is conspicuous among many other famous Roses, and one fine quality it possesses is that the flowers do not fall to pieces so soon as they open. There is more than the "beauty of a day" in the broad-petalled, shapely blossoms of Shot Silk.

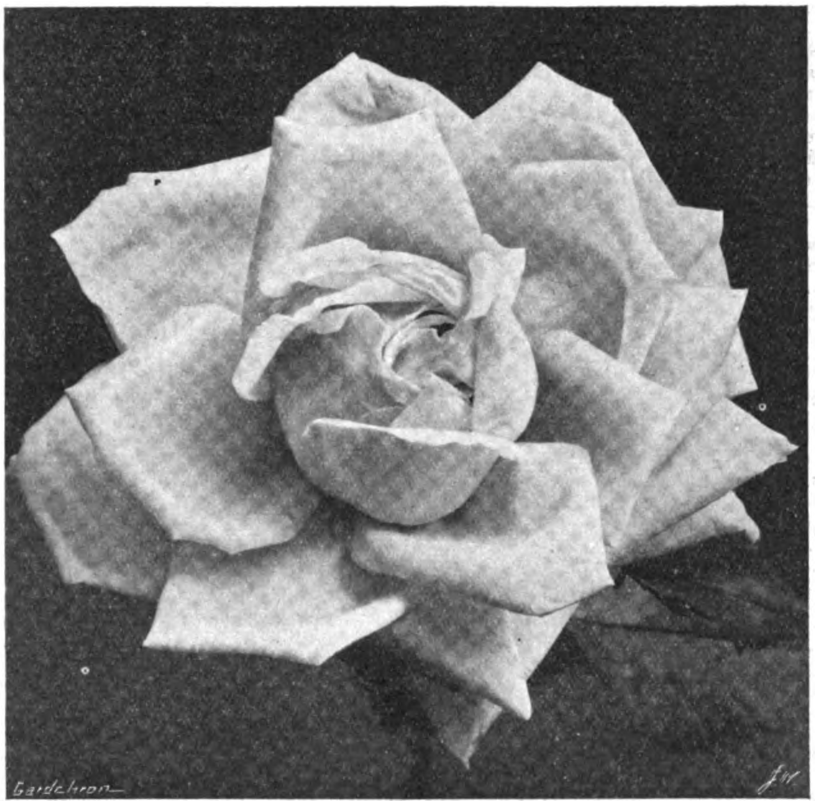

FIG. 48.—ROSE CLIMBING PAUL LÉDÉ

The colouring is exquisitely subtle and beautiful; salmon-pink is the principal shade, but there is a cherry-red also, while a deep golden base to each petal gives a warm glow and helps to produce that silky, iridescent effect, which has suggested its name. Sturdy and free-flowering, and as perpetual as any hybrid Tea Rose can be, this variety has dark and glossy foliage that provides a handsome setting for the large, stiff-stemmed blooms. Fortunately, Shot Silk possesses the quality of fragrance—and fragrance of an unusual quality—therefore, it has all the attributes that go to the making of a garden Rose of unusual excellence.

On July 28, 1923, Shot Silk was awarded the National Rose Society's Certificate of Merit, and on September 20 of the same year it was awarded a Gold Medal on the occasion of the occasion of this Society's autumn show held at Westminster, while at Southport Floral Fête in August last, it won the Gold Medal offered for the best new Rose.

CLIMBING PAUL LEDÉ.

The mutability of plants is one of the perplexing puzzles of plant physiologists, for changes may occur in the habit, flowers, and the period of blooming for no apparent reason. Gardeners have long been familiar with such changes, to which they apply the term sporting, and to this departure from the normal we are indebted to some of our best garden subjects.

Change of colour of the flower is the most frequent deviation in this respect, but sometimes the whole habit of the plant becomes altered and a new type may arise. It may be a dwarf form, one with a fastigiate habit, or, as is frequent among Roses, a climbing type quite distinct from its progenitor.

Roses sometimes give colour sports, but of their mutations the most interesting is the development of a climbing form from the bush type, and this proclivity has occurred in such well-known sorts as La France, Mme. Abel Chatenay, Caroline Testout, Richmond, Lady Hillingdon, Ophelia, and Chateau de Clos Vougeot.

In 1913, the beautiful variety Paul Lédé, a hybrid Tea Rose with petals of a glorious shade of apricot and orange, suddenly developed a climbing habit in Messrs. Stuart Low and Co.'s nursery at Enfield; a bloom of this sport is illustrated in Fig. 48. The flower is in every respect like that of the type, but the shoots will attain to a length of so much as eight feet in a single season. The rambling habit is, it is true, not so pronounced in these climbing sports from hybrid teas as it is in the Wichuraianas and other true Ramblers, but such plants serve a useful purpose for furnishing pillars, supports of pergolas, archways and similar structures, and their flowers are greatly superior.

In Messrs. Stuart Low's catalogue, Climbing Paul Lédé is described as the best of the climbing hybrid Tea Roses, and even when allowance is made for the pride which originators of new and choice plants always take in their novelties, it must be admitted that this climbing form of such a popular and beautiful Rose is a great acquisition in the Rose garden.

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Mexican Laelias.—Many plants of the early blooming Laelia anceps have passed the flowering stage and should be kept moderately dry at the roots. So soon as the new roots are observed to be developing from the bases of the last made pseudo-bulbs the work of supplying fresh rooting materials to plants in need of it should be proceeded with. Specimens growing in receptacles of sufficient size to accommodate them for another season need not be disturbed, but if the old compost has become decayed it should be carefully picked from between the roots with a pointed stick, and the dusty particles washed out by the aid of a syringe or the spout of a can, so that the drainage will be clean and made perfect. The leaves and rhizomes should be thoroughly cleansed from scale insects, and new compost worked carefully and firmly among the roots and around the base of the plants and rhizomes. Specimens that have overgrown their receptacles and have become somewhat bare of leaves in the centres should be broken up, the useless back pseudo-bulbs cut away, retaining about three sound pseudo-bulbs behind each lead, and the portions made up again into plants of a desired size. Osmunda fibre, broken up rather roughly with the dusty particles shaken out, provides a suitable rooting medium. In re-potting these Orchids keep the rhizomes of the plants just on a level with the top of the receptacle, press the compost firmly and insert a few pieces of crock here and there in the soil to assist the free passage of water. After root disturbance, water should be afforded sparingly, but the surroundings of the plants should be kept moist to encourage root activity. Other Mexican Laelias such as L. albida, L. autumnalis, L. furfuracea and L. Gouldiana require similar treatment. To grow and flower these Laelias satisfactory they should all be exposed to more light and sunshine and a rather lower temperature than is usually given Cattleyas and Laelio-Cattleyas.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Anemones. — Successional batches of the popular St. Brigid and similar Anemones should be planted so soon as the state of the ground permits. The time of planting determines, to a large extent, the date of flowering, and autumn-planted bulbs are already in flower. Plantings made now will extend the flowering period until May, after when these Anemones become less valuable, as many other subjects brighten the garden. These plants prefer a light, well-drained soil and liberal quantities of manure. Where the natural soil is of a very heavy nature it should be improved by the addition of light material when preparing for planting. By the planting of "claws" arrangements of colour may be secured which are impossible of attainment by sowing seeds; nevertheless, the culture from seeds is of a very simple character, and where a rich, moist soil exists excellent results may be obtained in one season. The ground should be thoroughly prepared, and from seeds sown now flowering plants may be expected in September and October. The woolly seeds should be rubbed in sand, and the two may be sown together in lines on the surface and be slightly raked in. Germination is slow, and it is important that the beds be kept free from weeds until the seedlings appear.

Salvia patens.—Owing to its intense blue colour Salvia patens occupies a high position as a bedding plant. Old plants which have been stored should now be introduced to heat to start them into growth. The tubers of large plants may be divided and potted; cuttings may be taken from these plants so soon as growths of two or three inches are available. Should stocks not be sufficient to provide the required number of plants by these means a supplementary supply may be raised from seed.

Violas and Pansies.—From seeds sown now strong plants of Violas and Pansies may be raised which will flower profusely during the coming summer and autumn. Sow thinly in well-prepared boxes or pans, prick off the seedling so soon as they are large enough to handle, and grow them on in cool conditions until they are ready for planting out. Violas come remarkably true to colour from seeds, and seedling Pansies yield flowers of delightful markings and variation in colour.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Muscat Vinery.—The vines in the Muscat house should now be started into growth, as these choice Grapes require a long season to finish and bring to perfection. The house and rods having been thoroughly cleansed, the borders top-dressed with a rich compost a few weeks since, and the ventilators left open, the vines will start into growth quickly. Should the border be in the least dry it should be soaked with tepid water; all white Grapes require considerably more water than black varieties throughout their season of growth. Keep the walls and paths damp, and spray the rods gently with tepid water early in the mornings and when closing the house. Maintain a night temperature of 45° and a day temperature of 55°. Bring in another batch of Strawberries to this house for successional cropping.

Early Vineries.—The buds on early vines are swelling fast and will require careful disbudding where several are developing. Remove the weaker buds with the thumb and finger. Early disbudding pays and it is a waste of the plant's energy to allow the shoots to develop and show the bunches before removing them. The strongest bud will generally show the finest bunch. I mention this because many gardeners do not disbud until they are sure of the bunch. The temperature should be raised to 50° at night and 55° by day; during a sharp spell of frost keep the temperatures a little lower and on no account allow the water pipes to become excessively hot. Ventilate the vinery with great care. I have used thin wedges of wood where the ventilating gear will not admit a small amount of air. It is very important to guard against cold draughts.

Early Strawberries.—The earliest plants of Strawberries are making good growth, and a little stimulant may be given them to cause the flower stems to elongate. Keep decayed leaves picked off the plants and stir the surface soil lightly. Fumigate the house mildly should green fly appear on the foliage. It is advisable to wash the pots before the flowers open; should any of the plants prove blind, burn them forthwith.

Tomatos.—The earliest Tomato plants are making rapid growth and will soon require to be potted for the final time or planted out, whichever plan is to be adopted. Pots ten inches in diameter should be used and the plants stopped at the fourth truss of fruit. Use a strong compost enriched with a liberal sprinkling of bone meal and containing mortar rubble. Ram the soil firmly and grow the plants on in a temperature of 55° by night and 65° by day. Ventilate the house, carefully guarding against cold draughts until the plants are well established. The finest Tomatos that I have grown were planted in a two-feet border of soil encased by boards and trained to a single stem to the top of the house which was twelve feet high, without stopping them. I strongly advise growing some of the yellow-fruited and Cherry-fruited varieties for salads. Red spider is proving a very destructive pest here in the Lea Valley, where Tomato and Cucumber growing under glass is a great industry. Flowers of sulphur is the best cure for this pest.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Streptosolen Jamesonii (syn. Browallia Jamesonii).—This plant, with its beautiful orange flowers, is an admirable subject for training on the pillars of the corridor or conservatory, provided sufficient light is afforded it. Established plants should now be partially cut back, and if grown in pots or small tubs, the plants should be repotted or top-dressed with rich soil on starting into new growth. Another quick-growing climber for a wall or trellis is Swainsonia galegifolia alba, but it needs to be grown in a position which affords plenty of light.

Liliums.—Consignments of newly imported Lily bulbs should be unpacked immediately they arrive and be placed in leaf-mould or some other light, moist material, in single layers. Those intended for pot culture should be potted with as little delay as possible. L. auratum, L. auratum platyphyllum, L. lancifolium (syn. speciosum) in variety, one of the best of which is Melpomene; L. longifolium giganteum and L. tigrinum Fortunei are all suitable for pot culture and are procurable at this season. All those mentioned being stem-rooting, they should be potted low down in the pots and be just covered with soil, thus allowing for later top-dressings. Afford the plants the coolest possible treatment during their early stages of growth. Plants of L. longiflorum Harrisii and L. formosum which were potted last autumn may now be placed in gentle warmth with a view to flowering them at Easter. Keep a sharp watch for aphis and fumigate the plants or syringe them with Quassia extract on its first appearance.

Watering Cuttings.—Sometimes loss accrues from "damping off," due to evaporation of moisture within the frames. To counteract this it is usual to wipe the glass of the frames or lights on the inside, daily, or the frame lights may be removed entirely for awhile, thus allowing the young plants to dry, but they should not remain uncovered long enough to cause them to flag. Though all practical gardeners are familiar with these simple practices, yet disappointment is often caused, owing to the non-observance of one or others of them on the part of young gardeners, and so I am constrained to urge the importance attaching to them.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Figs.—Owing to the mildness of the weather it has it has not been necessary to protect the trees from severe frost, but it is a safe plan to be in readiness with protecting material should the weather suddenly turn very cold, as it often does in the early spring after a mild winter. Pruning may be done now on fairly safe lines; thin out all unfruitful wood and sappy growths, also branches that are not required. In tying the shoots do not crowd the tree with young growths; a distance of from six to eight inches apart is sufficiently close. Cut out all affected wood that shows the slightest sign of brown rot and spray the tree with Bordeaux mixture.

Raspberries.—In tying in the young canes, always select the strongest and best-placed, and if they have grown beyond the required height shorten them accordingly. Clear away all weeds, rubbish and weak undergrowths, and give the roots a mulching of rotted manure and half-decayed leaves to encourage surface rooting as much as possible. Newly-planted canes should be shortened to within one foot of the ground to encourage the young growths to develop strongly; thin the latter to six inches apart if they develop too thickly in the spring.

Newly-planted Wall Trees.—These should now be pruned, shortening the shoots as is considered necessary to make a good foundation to the tree. Tie the shoots that are retained and see that the trees are quite firm in the soil. If Sweet Cherries and cooking Cherries that have been planted against the wall have plenty of leading shoots to form a foundation I do not advise shortening the growths; it is better to disbud the young growths later. The use of the knife gives a check to the tree, and results in gumming at an early stage. Bush trees of Apples, Pears, Plums, or others that have been planted this season should be cut back and spurred in, but not too severely the first year. Apples and Pears are longer recovering from the disturbance caused by planting than Plums, and the latter have many more fibrous roots to support them. Pay attention to the ties and see that the surface soil is firm about the roots.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Globe Artichoke.—There is a great demand in most establishments for this vegetable. Plants that have been protected by straw or other means should now receive attention, as the protecting material, if left in position for too long a time, does more harm than good and may result in destroying the crowns. Clean off all dead leaves and straw and give the beds a liberal mulch with farmyard manure. New plantations may now be made by removing some side shoots and planting them in well-prepared ground in rows four feet apart and two feet between the plants in the rows.

Jerusalem Artichokes.—Fresh plantations of this root vegetable may be made now. Plant good tubers in rows made thirty inches to thirty-six inches apart and set the tubers four inches to six inches deep. When replanting, whatever tubers are required for use may be lifted and stored in a clamp. If the tubers are being planted on a fresh plot, take care to see that every small tuber is taken out of the original plot, as every portion of the root will grow and prove a source of trouble.

Radishes.—It is best to sow this salad in small quantities and often, as then a good supply of young roots will always be available. Radishes may be forced in greenhouses or heated pits.

Peas.—Make another sowing of some good early variety of Pea; two suitable varieties for this sowing are The Pilot and Gradus. The distance between the trenches will be regulated by the height the Peas will attain. Guard against thick sowing and see that the Peas are evenly distributed in the trench. A liberal dressing of farmyard manure should be well worked into the bottoms of the trenches where the top soil is shallow; this will be very beneficial if continued drought is experienced later in the season.

Spinach.—Make another sowing of Spinach in the open, preferably between the rows of Peas, as the shade afforded by the Peas later will be beneficial to the Spinach in preventing it from going to seed quickly.

FOR NORTHERN GARDENERS.

By James Jeffrey, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Montbretias.—These plants may be dealt with whenever the soil is in a suitable condition for planting. Montbretias require a fairly rich soil, and when digging the ground well-rotted manure may be worked into it. A sunny position is necessary to produce good plants for flowering. If convenient replanting the corms each year is advisable, otherwise the plants will deteriorate. Montbretias may be planted at from three inches to four inches apart if a good mass be desired and at a depth of two inches. It is unfortunate that some of the best varieties do not always winter well out-of-doors in northern gardens and require storing, but the following sorts winter well here: Drap d'Or, Eldorado, Etoile de Feu, Solfatara and Rayon d'Or. Their own old foliage affords the plants excellent protection and may be removed ere the young growth becomes too long.

Bedding Pelargoniums.—Plants raised from cuttings struck in the autumn may now be potted singly in 3-inch or 3½-inch pots. Use a liberal amount of riddled leaf-mould and sand with the loam. The drainage may consist of a piece of turf, this being all that is necessary for the short period that the plant remains in the pot.

Bouvardias.—Cuttings of Bouvardias may now be inserted. Select young growths about two inches or three inches long and place them in small pots filled to within half-an-inch of the top with a light, sandy compost. Place the cuttings around the edge of the pots and plunge the latter in a propagating case provided with good bottom heat.

Jerusalem Artichokes.—If any of these plants remain in the ground they should be lifted and sorted, reserving the largest and best for table use. The Jerusalem Artichoke requires a rich soil and a sunny position to produce good tubers. The method of planting the sets is the same as adopted for Potatos.

Horse Radish.—A fresh plantation of Horse Radish may be made. Deeply cultivated ground is essential. The roots to be replanted should be about nine inches in length and inserted in rows made two feet apart and one foot asunder in the rows. The freshest and best roots for kitchen purposes are to be obtained in their third season after planting.

ALPINE GARDEN

THLASPI ROTUNDIFOLIUM.

This pretty little rock garden plant was formerly known as Iberidella rotundifolia and was introduced to cultivation so long ago as 1868. It is a native of the European alps; the illustration in Fig. 49 is of a specimen growing within five hundred feet of the top of Gorner Grat. It forms a very pretty, densely tufted plant with a big tap-root and is increased easily by means of seeds or by division.

Farrer, in *The English Rock Garden*, refers to it as "a treasure and glory of the highest shingles throughout the Alps, but always more especially on the limestone or sandstones, where, from its great tap-root, it forms, by means of shoots beneath the shingles, wide mats of tuffetted rosettes of fat, dark, broad, little oval leaves, thick and fleshy and waxy smooth and of a livid iron sombreness of colour, over which are borne in summer, in a profusion that hides the mass, great flattened heads of large and most deliciously-fragrant flowers of tender rosy-lavender." The flowers, which appear early in the summer, are fragrant.

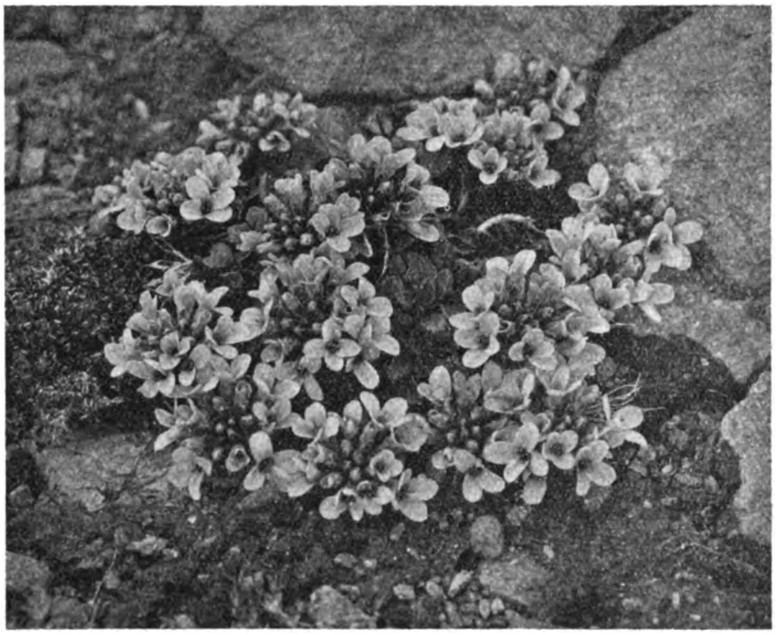

FIG. 49.—THLASPI ROTUNDIFOLIUM.

The soil best suited to this pretty Crucifer is one of a light, sandy texture; Farrer recommends planting it in a sunny, calcareous moraine of ample depth, with water flowing far beneath it. The species is figured in *Bot. Mag.*, t. 5749, under its synonym Iberidella rotundifolia.

GYPSOPHILA CERASTOIDES.

This little alpine from the heights of Kashmir is a first-rate subject for a warm, dry ledge in the rock garden. It is very unlike most others of its genus commonly seen in gardens, for it makes a low, compact cushion, two or three inches across, of firm, green leaves. The flowers, which appear just above these on short, erect stems, are a good deal larger than those of most other species, being nearly half-an-inch across, and they are a good clear white sharply veined with purple. G. cerastoides is an easy, hardy, and good-tempered little plant and, with us, at any rate, it is long-lived. G. Sundermannii, a hybrid between the above and G. repens, is also a desirable rock plant with very large white flowers and a neat, cushiony habit of growth. *A.T.J.*

BULB GARDEN.

GLADIOLI.

Few flowers are more beautiful for the embellishment of the garden during the autumn than the Gladiolus in its various types, and the spikes are valuable for cutting for indoor decoration. Greatly improved varieties have been raised in recent years not only possessing a wider range of colour than formerly, but the spikes and individual flowers have been much improved also.

A good, loamy soil that has been well enriched with decayed manure is best suited to the Gladiolus; the ground should be double dug and the new manure placed well below the surface, so that the corms will not be in contact with it when planted. Leave the surface rough for the weather to sweeten it until the spring, when it should be forked over and made ready for planting.

Early in March each corm should be potted in a small receptacle filled with a compost consisting of two parts loam, one part leaf-mould, and one part hot-bed manure, with a liberal quantity of silver sand. The corms should just be covered with soil, placing some sand at the base of each and pressing the soil fairly firmly around them. Label each variety and place the plants in a cold frame on a bed of coal ash, watering them in with a fine rose can.

If the weather is cold and the soil moist watering may be deferred until warmer conditions prevail. In any case this should not be overdone or the corms may rot. When growth is active the plants should not be allowed to become dry. By the time the pots are full of roots, and the growth a few inches high, the weather should be suitable and the ground in proper condition for planting the Gladioli in the open.

As Gladioli are plants of stiff appearance they are most effective when planted in rows of one colour or in blocks of colours, four or five rows to each.

The rows should be one foot or fifteen inches apart, and the same distance should be allowed between the plants in the rows. Turn them carefully out of the pots and plant firmly, using a trowel. Great care should be taken in doing this, as the young growth is easily snapped off at the base. When all the corms are planted, rake the ground between them to give it a neat appearance, and use the Dutch hoe occasionally to keep down weeds.

By potting the corms and starting them into growth before planting them in the open, there should be no gaps in the rows. Those who have no time or convenience to pot the corms need not be deterred from growing Gladioli. Good corms are fairly reliable, and may be planted direct in the garden about the middle of April, or even later if the ground is cold.

Plant them about three or four inches deep, placing some sand at the base of each corm, and sprinkle sand over them.

In either case, the site should be well drained by deep digging.

Before top growth becomes too tall, each plant should be staked neatly and tied loosely in order to allow the spike room for growth. Keep a watchful eye on the plants and ease the tie if it is compressing the shoot or preventing its free development.

Should the weather prove hot and dry, the plants should be mulched with leaf-mould or old mushroom-bed manure and a good soaking of water given them. The application of diluted liquid manure once a week will assist the plants to form fine spikes and large blooms.

Some of the colours, the blues and reds especially, are apt to fade if the sun is very hot, and varieties of these colours should be shaded with tiffany or scrim canvas when the sun is very powerful. Light poles may be driven in the ground on the outside edge of the bed, and thin wire stretched across them to carry the shading material. This should be fastened so that wind cannot blow it down and break the spikes. If required for room decoration the inflorescence may be cut when the bottom two or three blooms are unfolded; the others will open in water and provide an ornament for a long time. In cutting the spikes do not cut into the heart of the plant or the corms will not be able to finish their growth; if well grown, there will be plenty of length of stem without doing this. When the plants have finished flowering, keep the surface of the ground well stirred with the hoe and give the roots a stimulant occasionally. So soon as the foliage turns yellow, take up the plants and hang them in a frost-proof shed until the foliage is thoroughly dried off, when the tops may be easily detached, and the corms cleaned and stored. The primulinus hybrids have become very popular. These are very light and graceful in growth, and the spikes are ideal for vase decoration. The individual blooms are not so large as those of the older types, but they are of the most pleasingly soft colouring in shades of orange, red, and yellow. The spikes are most attractive when nine to a dozen are arranged in a large vase. The same treatment as advised for the large-flowered varieties suits this newer type. *R. W. Thatcher, Carlton Park Gardens.*

WILD GARDEN.

GERANIUM LOWII.

Whilst hardly choice enough for better places this is an attractive plant for the wild garden or woodland.

It may best be described as a gigantic Herb Robert, for it closely resembles the latter in every respect save size.

It is a biennial and flowers early in the season. Self-sown seedlings of G. Lowii make strong plants by the end of the year. The following season they send up stout, angular and many branched stems of a deep red colour to the height of two feet or more and these terminate in pairs of flowers of the same colour and form as the Herb Robert but about one inch across.

The flowering season extends well into autumn, when the dying foliage becomes a brilliant blood-crimson. It may be noted that whilst the foliage of this plant in the seedling stage is more or less hairy, the leaves and stems of the flowering branches are smooth and glossy.

G. Lowii, as I have suggested, is a hardy, vigorous plant that will hold its own in the rough herbage of open woodland or wild garden and seedlings will frequently appear on old walls and buildings.

GERANIUM ENDRESSII.

This hardy Geranium never fails to arrest the attention of all unfamiliar with it, for the colour of its flowers is an unusual shade—a chalky rose-pink. They are about an inch across and produced during the greater part of summer on slender, branching stems rising to about one foot in height, thus clearing the pale green, slightly hairy leaves.

G. Endressii is a vigorous grower in any good free loam that does not get too dry, and it does not object to some shade, often doing well under tall, deciduous trees. Propagation is a simple matter, for this species makes a mat of rhizomes and these are easily detached with their roots.

In this garden are naturalised what appear to be hybrids between G. Endressii and G. striatum. Of these there are two distinct forms, one having flowers of a glistening silver-pink, whilst those of the other are the chalky rose of Endressii but a good deal paler. These plants are extraordinarily robust, doing well in rank grass or other herbage in sun or shade, and in a few years the plants, but especially the former type, will make immense clumps a couple of feet across. Oddly enough they seem to seed true, any variation in character being extremely rare. *J. N. Wales.*

HARDY BRITISH FERNS.

The cultivation of hardy Ferns is becoming increasingly popular year by year, possibly owing to the vast number of beautiful species and varieties that are available. The delicacy of the fronds of many, and the wide diversity of form and habit of the foliage, together with the plant's suitability for growing in partial or dense shade are some of the claims Ferns have which appeal to growers.

The essential conditions of Fern culture culture, either the raising of plants from spores or the growing of the mature plants, are shade, moisture, and ample drainage; if the delicate fronds of many are exposed to the full sun the plants suffer injury, but where certain kinds succeed in full sunlight then it is most important that the plants have a cool and moist root-run. It is generally supposed that hardy Ferns will grow in any kind of soil—for a while they will—but to attain their full beauty and dimensions they should be planted in a northerly or a north-west aspect, in light, porous soil, such as fibrous peat, fibrous loam, and decayed leaves mixed with a liberal quantity of coarse sand. Though moisture is essential it should not be present in the soil in excess. During times of drought watering must be resorted to, and a fine rose watering-can should be used, as Fern fronds are most delicate in texture and may be broken if watered vigorously.

Ferns are propagated by spores and division of the rhizomes, which latter may be severed with a few rootlets. The best time to transplant Ferns is during spring, when growth is active and before the summer growth has commenced, but planting may be done at almost any time.

The raising of Ferns from spores is a very interesting and fascinating occupation. Well-washed 6-inch to 8-inch flower pots should be half-filled with broken crocks, placing a large piece in a concave position over the drainage hole, and finishing with very small pieces.

The compost should consist of two parts peat, two parts silver sand, and one part good, fibrous loam, and the pot should be filled to within one inch of the rim. Sprinkle crushed brick or sand over the entire surface of the compost, water the latter well, and allow it to drain. Sow the spores as thinly as possible, cover the pot with a sheet of glass to prevent the growth of Convervae, and place the pot in a darkened part of a greenhouse. When in the dark, care must be taken in regard to moisture, as the soil should not be allowed to become soddened, but just moist; when water is necessary place the pot gently in a vessel of water. Admit air occasionally, and also remove the glass frequently and wipe it free of condensed moisture. Never allow the germinating spores to become exposed to hot or dry air. Germination is, in the majority of species, slow. Prothallia are formed which in due time may be taken out in small quantities and placed in other pots or boxes in a similar compost to that advised for sowing the spores, and transplanted until finally the seedling Ferns may be planted in the garden or rockery as desired.

It is practically impossible to give a descriptive detailed list of the numerous species and varieties as numbers are very similar, although distinct when in full and mature growth. It must suffice to enumerate just a few of the most outstanding members of the various families, and those worthy of inclusion in every Fern lover's collections. Perhaps the most noble of the several evergreen Ferns are the Polystichums, of which there are but few indigenous species; the varieties are, however, very numerous and exceedingly varied. They grow well in a mixture of loam, decayed leaves, and sand. These Ferns need shade and are most vigorous in growth; the best of them are the forms of P.

angulare divisilobum plumosum, known as densum; No. 2; robustum, Perry's and superbum. All these have large, broad, plumose fronds of wonderful delicacy. Other varieties of merit are P. a. divisilobum dissectum, also the varieties Esplan, magnificum, nitescens, and stipulatum. P. aculeatum cristatum, also the handsome grandiceps Abbott's variety, are very decorative, as is also P. angulare proliferum, Wollaston's var.

The Scolopendrium (Hart's Tongue Fern) is a protean genus and has given us some of the most beautiful and extraordinary forms, some resembling veritable balls of green, while others are beautifully crimped and goffered (see Fig. 50); others are lacerated similar to the leaves of Endives. All are admirably adapted to the hardy Fernery or cool house, as pot plants, grown in loam, peat, and well-broken limestone. These Ferns are most effective when planted on the banks of a stream. The best of the Scolopendriums are S. vulgare crispum nobile, S. v. c. speciosum, also grande and robustum.

The Athyriums or Lady Ferns, which are frequently included under Asplenium constitute an extremely variable family, with graceful and delicate feathery fronds of great beauty. When planted on the shady banks of a running stream they add a singular charm to their surroundings. They delight in perfect shade and abundant moisture, and grow well in a compost of peat, sandy loam, and leaf-mould. These Ferns make charming pot plants for a shady greenhouse. All the Athyriums are deciduous, and many grow from three feet to four feet tall; a few of the best are A. Filix-foemina corymbiferum, A. F-f. grandiceps, A. F-f. percristatum Elworthii, A. F.f. polydactylum, A. F-f. plumosum, Axminster var., divaricatum, and Druery's var.

Nephrodium (Lastrea) Filix-mas (The Buckler Fern) will thrive in almost every kind of situation in which Ferns are found, either in moist hedge banks, in shady lanes, or the margins of a running stream. Wherever they are planted they add considerably to the attractions of the hardy fernery. The plants retain their fronds until well into the winter. These Ferns should be planted firmly in soil consisting of equal parts sandy loam, peat, and leaf-mould, keeping the crowns well above the surface. All the species of Nephrodium are effective and should be included in all collections.

Polypodium vulgare and its varieties are members of a most useful and effective genus for planting on the rockery or in a greenhouse. They have extremely varied and beautiful fronds, from twelve inches to eighteen inches long, arising from a creeping rhizome. The plants are evergreen, and adapted for growing on old walls, trunks of trees, etc.

For planting in moist situations Polypodium Dryopteris, the Oak Fern, and P. Phegopteris, the Beech Fern, are universally appreciated on account of their delicate, slender, fresh green fronds. Dryopteris calcareum, the Limestone Polypody, is somewhat similar to the Oak Fern and revels amidst limestone rocks or similar stony soils and does not require the same deep shade as some, but to obtain fully developed fronds of this species the deeper the shade the better.

Perhaps the most noble of British Ferns are the Osmundas, which are seen to the best advantage when planted at the base of a sheltered bank or by running stream, where their roots can reach the water. They often grow to a height of five feet to seven feet. There are several species and varieties and all are equally effective. The Osmundas should be planted in soil consisting of equal proportions of peat and decayed leaves with a little coarse sand added.

It is important in the successful culture of hardy British Ferns to give them an abundance of water when they are growing actively, and during times of drought they should be watered daily. *W. Logan.*

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

PRIMULA EFFUSA.

THIS new Primula from Western China promises to be a very useful decorative subject for the cool greenhouse, and is possibly seen at its best in a small unheated house. Although quite distinct from P. malacoides it may be described as a slender growing edition of this popular plant. This species is very free and remains in flower over a long period. The slender flower stems attain a height of about nine inches, the small flowers being a pleasing shade of pale rose.

Plants raised from seed, sown at the beginning of July and given the same treatment as is suitable for P. malacoides, commence flowering about Christmas and remain in flower for several months. The plants make a rosette of small leaves, the foliage and petioles being partly covered with a white farina. P. effusa appears to be perennial, and the old plants may be divided to obtain increase of stock. Although it is too early yet to say what place this dainty little Primula will occupy in gardens, it seems distinctly promising, especially for lovers of choice plants.

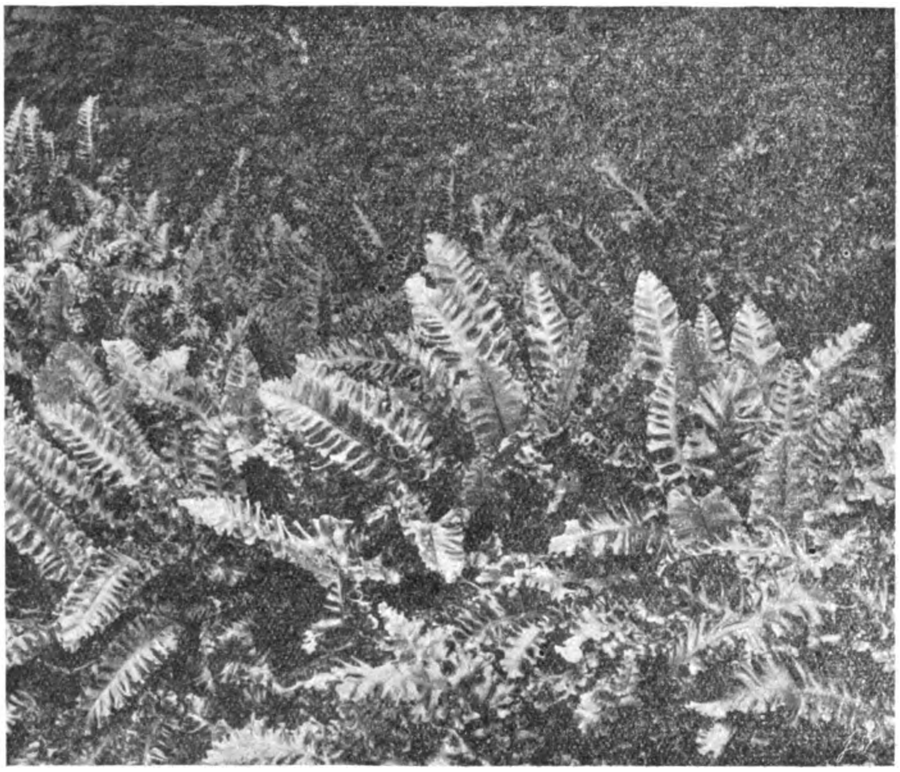

FIG. 50.—A FINE TYPE OF SCOLOPENDRIUM VULGARE CRISPUM.

HELIPTERUM MANGLESII (syn. RHODANTHE MANGLESII).

THIS beautiful "Everlasting," with rose or white flowers, is very useful and popular for pot culture. Seeds may be sown directly into the flowering pots, and five-inch pots are the most suitable size. So soon as possible it is desirable to thin the seedlings to eight or twelve plants in each pot. There is a prevalent idea that this class of plant cannot be transplanted successfully, but the idea is fallacious, for, with care, the seedlings may be transplanted, and transplanting causes them to produce a number of shoots from the base.

Seeds should be sown in a cool greenhouse at or about the middle of January, and again during March to provide successional plants. The seedlings thrive quite well in any good potting compost, and beyond the ordinary cool-house treatment generally accorded similar plants, their cultivation presents no difficulty. As they approach the flowering stage they should have some timely support.

HELIPTERUM HUMBOLDTIANUM (syn. H. SANDFORDII)

THIS species has small yellow flowers, and succeeds under the same treatment as that advised for H. Manglesii.

RICINUS COMMUNIS (CASTOR OIL PLANT).

ALTHOUGH there are many varieties of the Castor Oil Plant, all have large, handsome foliage, and in the warmer parts of the country they are suitable for sub-tropical bedding, while indoors they are useful for furnishing large conservatories. The dwarf variety known as Gibsonii, with dark red stems and foliage, is the most useful for cultivation indoors.

The large seeds of Ricinus should be sown singly in sixty-sized pots, any time during March, in a temperature of 55° to 60°; subsequent cultivation consists in potting the seedlings as they require it until they are in eight-inch pots. As they are strong growing subjects they require a rich compost, and should be kept in vigour by feeding when they have filled their pots with roots.

RIVINA HUMILIS.

ALTHOUGH this plant is a perennial it is usually treated as an annual. It produces long racemes of small white flowers, but its chief attraction lies in the small, bright red fruits, which remain effective over a long period. There is also a variety with yellow fruits but it is not so attractive as the type. March is a good time for seed sowing in a temperature of 60°; treat the young plants liberally to ensure their free growth in five-inch or six-inch pots. As they increase in size they should be gradually accustomed to a greenhouse temperature: such plants fruit during the autumn and winter. For a summer display seeds should be sown the previous September. Rivinas grow freely in any good potting compost, and as they branch naturally no pinching is required. Young plants attain a height of twelve inches to eighteen inches, but if so desired they may be grown on for a second year, when they make large specimens.

ROSA POLYANTHA NANA, "FAIRY ROSE."

This dainty little Rose, which grows about a foot in height, produces its pale rose-coloured, double and semi-double flowers very freely a few months after sowing. A temperature of 55° to 60° is suitable for germinating the seeds; place the seedlings singly in 48-sized pots, or three in a six-inch pot. As they increase in size they should be gradually accustomed to an ordinary greenhouse temperature. They succeed in any good potting compost.

SAINTPAULIA IONANTHA.

This pretty little plant is very charming for an intermediate or warm greenhouse. The flowers vary somewhat in colour, from violet to deep blue, which forms a striking contrast to the yellow anthers.

Although a perennial, Saintpaulia ionantha may be treated as an annual, as it may be flowered in six months from seed-sowing. Sow the seeds in a light sandy compost and place them in a temperature of 60°. So soon as the seedlings can be handled prick them out into pans in a light, rich compost, and when sufficiently large place them in small sixty-sized pots, using a compost of three parts medium loam and one of fibrous peat or leaf-mould, with enough silver sand to keep the whole open and porous. Ultimately, 48-sized pots will be found large enough for the flowering plants, and well-flowered specimens are very charming for table decoration. An alternate method is to place several plants in a shallow pan.

Especially good forms sometimes appear in a batch of seedlings, and if so desired they may be perpetuated by division or by leaf cuttings. *J. Coutts.*

HARDY FLOWER BORDER.

ERIGERONS.

The dwarf, cultivated Erigerons are most desirable and decorative subjects for the herbaceous border, while a few are very suitable for the rockery.

They fill a very useful position in the herbaceous borders, associated with Paeonies and Potentillas, or planted in front of Delphiniums, etc. They are in bloom from May onwards, well into October and even November; their flowers are of various shades, from white to purple and violet, while a few have bright pink and orange flowers.

Of easy culture and not fastidious as to soil, Erigerons may be planted in almost any position in the garden; for cutting for table decoration they are invaluable.

Those most suitable for the front row of the herbaceous border are:—Erigeron Asa Gray, which has a dense, tufted habit, and produces innumerable straw-coloured flowers, each as large as a shilling piece. E. Coulteri is a very attractive species, with pure white flowers, with a bright yellow disc; the plant is in flower from June to August. E. aurantiacus blooms during June and July, producing large, glowing orange-coloured flowers; the plant grows six inches to nine inches tall, and is very effective. E. Edina has snow-white flowers, produced in abundance from June to August; this is a dwarf variety, under twelve inches in height. E. Elsie is a new variety of a graceful pendant and neat habit, producing dainty, rose-pink flowers in abundance during July, and continuing in bloom until October. E. mucronatus is a delightful species for semi-shade; it is of prostrate habit, producing neat tufts of dark-green foliage and myriads of small, Daisy-like pink and white flowers all through the summer. E. Freemontii has pretty, soft Lavender-blue flowers, very freely produced. E. flagellaris somewhat resembles E. mucronatus, but is more robust, and has rose and white flowers. *W. L.*

INDOOR PLANTS.

SOLANUM CAPSICASTRUM.

The note by Mr. John Heal (p. 60) on this useful indoor plant was instructive. Standard plants of Solanum capsicastrum are very effective, and afford a pleasing change to the general run of indoor plants. Specimens having a clean stem of from fifteen inches to twenty-four inches may be grown in two years from seeds. I have found the small fruiting variety the best for this purpose.

The seeds should be sown in the spring and the young plants encouraged to grow freely, all side shoots being removed. In June they should be planted out in rich soil on a warm, sheltered border, supported by neat stakes, and tied as growth advances.

Apply water to the roots as required and syringe the foliage during the evenings following very hot days. By September, clean, straight plants will be produced. They should then be dug up, potted, and placed in an unheated pit, which should be kept somewhat close until the roots are again active. Spray the plants overhead daily during bright weather. Grow them in a cool house in the winter and allow the roots to remain moderately dry. In March encourage them to make new growths by placing them in a warmer temperature and increasing the supplies of water.

As growth advances the plants should be stopped, which will result in laterals being produced, these forming the foundation of the head. The treatment during the second season is identical with the practice followed the first season. Any shoots arising from the base of the plants should be removed. The berries are produced during the autumn.

When potting the plants endeavour to accommodate the roots in pots of moderate size, as these are generally the most serviceable for decorative purposes. Handsome specimens of Solanum capsicastrum are obtained by growing on the plants for several seasons. *Colin Ruse, The Hyde Gardens, near Luton.*

ARDISIA CRENULATA.

This berry-bearing shrub is of slow growth, but it is a long-lived plant, continuing for years in good condition, and bearing a crop of berries each season: indeed, not infrequently, when grown under cool conditions, it carries the crops of two seasons simultaneously.

Seeds of Ardisia crenulata germinate freely, self-sown seedlings springing up around the plant when staged on an ash or gravel base. The young plants should be grown in a brisk, moist heat to the fruiting stage, afterwards inuring them to cooler conditions. It forms an unbranched, symmetrical bush, furnished with short, spur-like growths, each terminating in a loose cluster of bright red berries. The growths are produced all around the stem at regular intervals, and, with one tier of berries overlapping the other, the plant has a round, column-like appearance. With age it becomes leggy, and may be cut down to within a few inches of the base, shaken out, re-potted, and grown on, restricting the resultant growths to one, or at the most, two of the strongest.

Although bare at the base, the old plants are useful, decorative subjects interspersed lightly among dwarfer subjects *Fred W. Jeffery, 20, Stevenson Drive, Langside, Glasgow.*

PERPETUAL-FLOWERING CARNATIONS.

One of the subjects touched upon by *Private Gardener* in his interesting article on "Perpetual-flowering Carnations," on p. 409, in *Gard. Chron.*, is rust.

This disease is probably the cause of much trouble, especially in private establishments, where comparatively few Carnation plants are grown, every weakness being more apparent than among tens of thousands of plants. Your correspondent states that permanganate of potash will kill rust in a few hours, but if such is the case, why do we find him later dusting his plants with lime?

The fact is that rust is a parasitic fungus and all the sprays in the world will not kill it! If they would, why do the purveyors of plants sell washes and powders and at the same time cut the diseased parts off plants before sending them out! Spraying merely dislodges the ripe spores and carries them to the soil and leaf bases, and in a few hours another crop will be ready to take their place.

I have charge of a fair-sized private collection, numbering about a thousand pot plants, and it would be absolutely impossible to find a speck of rust on any of them. Infected plants have been bought to it from time to time, but by treatment they have become free of disease.

The best way to combat rust is to start with young plants, keeping them in a dry, airy house, quite apart from the general collection. The stock should be looked over carefully every day to see if there is the slightest sign of skin eruption, and if disease is detected, cut the leaf off well below the trouble, to prevent the spores ripening, and, of course, burn all such pieces. During the treatment, which should extend over three months, water the roots very sparingly, the object being to prevent sappy growth. Water without a rose to avoid moisture being spilt between the pots or on the foliage, remembering that the beautiful glaucous skin of the leaves is a natural protection against damp. Use fire-heat as little as possible, and if employed, open the top ventilators accordingly.

If this treatment is given a fair trial, rust will soon disappear. Having accomplished this desirable end, guard against placing the healthy plants where spores from diseased stock can settle on them. By so doing, and with cool, airy treatment, coupled with careful watering, there is no reason why the thought and worry of rust need be entertained. Should red spider appear place the infested plants on their sides and thoroughly souse them with mild salt water, afterwards shaking the plants free of the fluid and replacing them in position on the plant stages. *D.*

TREES AND SHRUBS.

OLEARIA TRAVERSII.

Sir Herbert Maxwell in one of his interesting notes (see p. 57 vol. lxxiv.) referred to several Olearias, and I was particularly interested in his remarks concerning Olearia Traversii. He wrote to the effect that possibly it was only worthy of a place in a botanical collection, owing to the flowers being so inconspicuous. I grant the flowers are not showy, but for its fine, glossy, evergreen foliage, good habit, and great stature, this Olearia is worth planting, and above all its extreme hardiness on a cold sea front makes it a great acquisition.

In these gardens we have tried most plants that are hardy, or reputedly so, but I state without hesitation, that we have found nothing to equal this Olearia. We had two specimens twelve feet high and about as much through, on the north cliff in the full blast of the north wind, straight from the sea; a place where nothing else would grow unless behind shelter boards, and where I have seen Privet, Elders, etc., completely blackened in August.

Unfortunately, these trees had to be sacrificed two years ago owing to work on the cliff subsidence. We have another tree, also growing on an exposed spot, less than one hundred feet from the sea, which is considerably larger than those mentioned, being quite twenty feet high and the trunk fifteen inches in diameter.

We inserted all the cuttings procurable from the plants that were cut down, and quite ninety per cent. of these rooted in the open. The young plants made quick growth, some being now over two feet high. We have now about two hundred good specimens for planting out this season, and if, as I hope, it shows no tenderness in its young state, I consider that the question of shelter is completely solved for us.

This Olearia has also the advantage of being deep-rooted, and able to stand firm against the strongest winds, being in that respect quite unlike Cupressus macrocarpa, which is often extolled as a shelter tree, but which is quite useless here in the full sea blast.

I imagine that this Olearia, like others of the same genus, would be susceptible to hard and continuous frosts, such as are experienced inland, but for standing up to the cold north-easter, without showing the slightest suffering, there is no tree in my opinion to equal it. All the Olearias are very valuable here, but for hardiness, great stature, beauty of form and foliage, the subject of this note is easily the best, and in the matter of flowering only, is it of no account. *J. Clark, Parks Superintendent, Scarborough.*

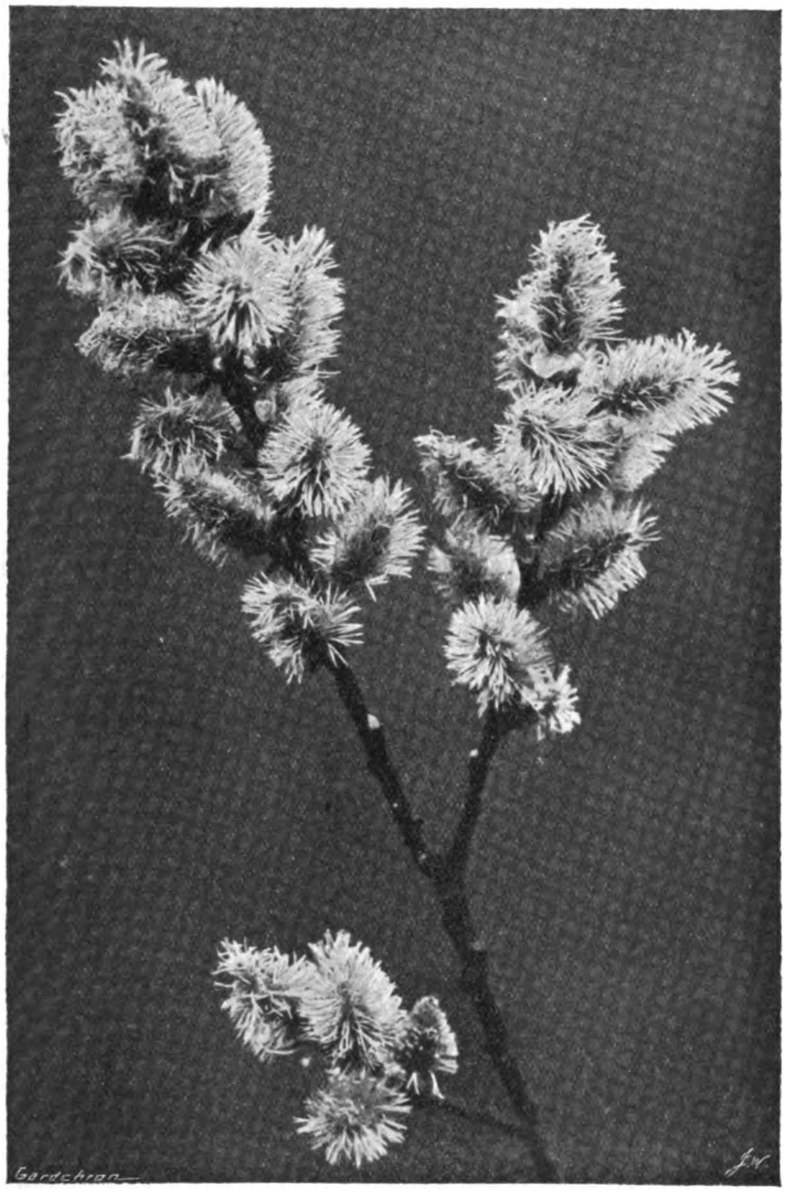

FIG. 51.—SALIX CINEREA VAR. MEDEMII.

R.H.S. Award of Merit, February 10.

SALIX CINEREA VAR. MEDEMII.

Among Willows cultivated for their showy catkins Salix Medemii is one of the most noteworthy. Not only is it the earliest tree, or large shrub, to develop the showy catkins, but these are among the largest of the genus. This season, a notably mild period, they commenced to attract attention quite early in the year, and by the end of January the yellow catkins, glistening in the early sunshine, equalled in beauty and interest anything in flower in the open at Kew. S. Medemii—by some authorities regarded as a variety of the Grey Willow, S. cinerea—has been in cultivation at Kew since 1879. The leaves are obovate or oval, 2 inches to 3½ inches long, ¾ inch to 1½ inch wide, grey white or even silvery beneath. Catkins 1¼ inch to 1¾ inch long and ¾ inch thick, with very showy yellow stamens.

In the great majority of Willows the male and female flowers are produced on different trees or shrubs. The subject of the illustration (Fig. 51) is a notable exception, as occasionally on the trees of S. Medemii at Kew, male and female flowers are borne on the same catkin. Flowering so early in the year it is desirable to plant this Willow in a position affording the catkins some shelter. It may be that because in most seasons the catkins are more or less damaged by frosts, S. Medemii is not better known or more often planted. *A. O.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

The remarkable series of mild winters holds good. So far, on this sea-board, the present one has been the most open of the lot. Here the mercury has never fallen below 30° since the first week of November, when it registered seven degrees of frost. One shivers to think of what may lie in wait for too precocious growths in March and April; but—*Quid sit futurum cras fuge quaerere*—let no foreboding mar our enjoyment of the profusion of blossom on Rhododendron Nobleanum, R. praecox, R. Jacksonii, and R. moupinense; Hamamelis mollis, and H. arborea; Kerria, sheets of Snowdrops and Crocus vernus; Snowflakes; Berberis japonica, B. pinnata, and Erica arborea, the last-named being just on the eve of diffusing far-flung fragrance.

It is an annual source of disappointment that I may not add the Hepatica to this early list. Forty years have passed in futile attempts to get it established here; we have tried it in sunshine and in shade, with lime and without, always with the same result - steady decline. Yet within seven miles of us there is a garden where it used to abound so generously that clumps of it were transported into the woods, to be promptly devoured there by ravening rabbits. Will any reader of *The Gardeners' Chronicle* point out what is amiss in our treatment of this pretty Anemone?

The Daffodil festival is always inaugurated here by the quaint blossoms of Narcissus cyclamineus, and it is remarkable how long these blossoms endure before they fade. This year the earliest of them erected the segments of its perianth on January 18 (in an open border), and that individual flower remains perfectly fresh and bright on this 10th of February, having lasted untarnished for three weeks and two days. I regret that, having to leave home to-day, I shall not be able to register its full duration. This gay little flower does not seem to be grown so commonly as it deserves to be; at all events it is absent from most gardens. Flowering as it does in advance of the great majority of the genus, the bulbs should be planted as early as possible, preferably in September. It is very readily raised from seed.

I have never succeeded in deriving from Adonis amurensis the gratification which we were led to expect when it was brought from the Far East. True, one should welcome any flower that blows in January, but the hue of this one is but a dingy yellow, competing at much disadvantage with the gaiety of Winter Aconites, and brooking no comparison with the sheen of A. vernalis. Even the late Reginald Farrer, who was the reverse of niggardly in praise of flowering herbs, wrote disparagingly of A. amurensis as a plant "quite easy to cultivate, but I rather hope by now that I have lost or parted with all mine." (*Alpines and Bog Plants*, p. 52). *Herbert Maxwell, Monreith.*

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ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street. Covent Garden. W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

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Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

THE GARDEN IN ANTIQUITY.*

II.—PERSIAN GARDENS AND PLANT NAMES.

IF it is to Persia that we owe our word. Paradise, it is to her florists also that we are indebted for some of our most familiar names of cultivated flowers and plants. This fact, therefore, justifies us in giving to Persia the first place in our list of old-time gardens. In an examination of a few of the best-known of these names, Tulip readily occurs.

Everyone who is familiar with the brilliant turbans worn in the East will see how appropriate it is that the flower and the head-dress should be designated alike. In Persian, the name for a turban was *dulband*, and this term has been borrowed by Hindus, Arabs, and Turks, and introduced through them into Western lands. The Turks modified *dulband* into *tulband*. This became, in the mouths of the Italians, *turbante*, and thus turban. But *tulband* also became *tulipano*, *tulipa*, a Tulip. A native of Northern and Western Asia, the Tulip abounds in Persia, where it has from the earliest times been employed, as the Rose is elsewhere, as an emblem of love. Our famous old herbalist, Gerarde, interested himself greatly in this popular plant, and informs us that "Tulipa groweth wild in Thracia, Cappadocia, Italie, in Bizantia, about Constantinople, at Tripolis, and Alepo in Syria, from whence I have received plants for my garden."

Modern research leads to the conclusion that our word Rose is to be traced back to the Old Persian or Zend, which gives us Paradise; and the history of this word is scarcely less romantic than that of the other. In tenth and eleventh century lists of plant-names, we find the name already established in Anglo-Saxon, having reached us from the Latin *rosa*. This was the same as the Greek *rhodon*, which in some of the dialects took the form *brodon*, and so leads us to the Eastern name of the Rose, usually written *ward*. This word *ward* is supposed to have been pronounced by the Greeks *bord*, and, with the sign of the neuter noun added, *bordon*, then, *bordon* became *brodon*, *vrodon*, *hrodon*, *rodon*, and so Rose.

But where did *ward* originate? It is said to be Arabic, and was introduced in pre-Christian times into Hebrew; but, though the most learned scholars have given the history of the word the greatest attention, all the difficulties have not yet disappeared. One of our ablest Zend scholars wrote me on the subject as follows:—"I myself am half disposed to think that the Greek and Latin words are independent borrowings from the Zend word. This is *varetha*, where the pronunciation of the *th* resembles that in *bathe*, and may have been imperfectly caught in two different ways by Greeks and Italians, the fate foreign words usually incur." All of which goes to show that when we come to discussions such as these, a little learning is a dangerous thing. What seems perfectly clear, however, is this: that the ancient Persians called the Rose *varetha*, and that this name became *ward* in Arabic, *bordon* or *brodon* in Greek, *rosa* in Latin and Rose in Anglo-Saxon.

If we turn to our dictionaries for a history of the Lilac we shall have a similar romance. Spanish and Portuguese, Italian and French, have the word from the same source as the English, and it is traced through Turkish *leilaq* to Persian. Originally the word was intended to set forth the blue tinge of the flower, and is related to another Persian word, *nilak*, which means bluish. "Of the common Lilac there are three varieties—the Blue, the Violet, and the White—and it is to the first of these that the name applies."

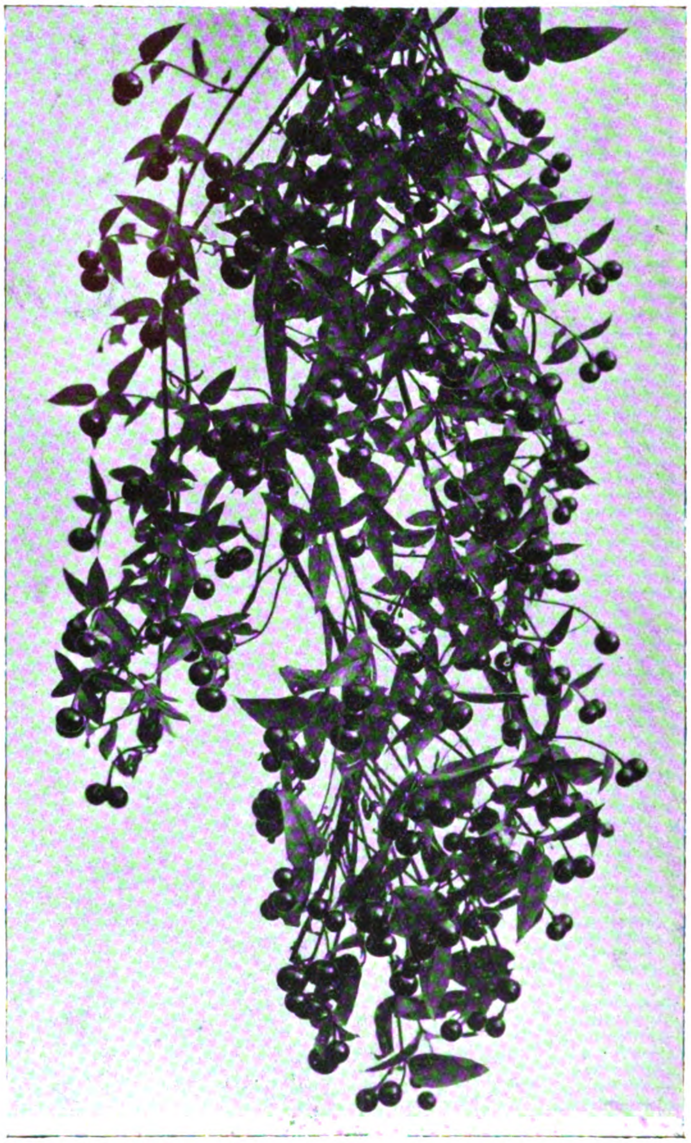

FIG. 52.—JASMINUM BEESIANUM IN FRUIT.

(see p. 131.)

Into the history of the word *susan* or *shusan*, which is said to mean a Lily, it is not possible for me now to enter, but it has long been thought that the name of *Shusan*, the palace, had some connection with that of the flower-strewn plains of Persia. If, however, we turn from flowers and shrubs to fruits and other plant products, we find the same evidence of horticultural knowledge in early Persian times.

We are wont to speak of the Orange and Lemon, for example, just as we speak of the Plum or Apple. The names are so familiar that we never dream they are Persian, any more than we think that the Rose and the Tulip owe their names to the same language. Take the word Orange first. Its history is another romance in plant nomenclature, and the French and other Romance races have derived it by popular etymology from the Latin word for gold. The Orange is indeed the golden fruit—Apples of gold in pictures of silver—but if we trace the English and French forms backwards we come to Spanish *naranja,* and so arrive at the Persian *naranj* or *narang,* which seems to be derived from *nar,* a Pomegranate. Much interesting information relating to this subject will be found in De Candolle's *Origin of Cultivated Plants* and the writers quoted therein. As for the Lemon, which is also written *Limon,* we find it ultimately referable to the Persian *limun* or *limuna,* Lemon or Citron. The word Peach is itself also derived from Persia.

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* The Rev. Hilderic Friend's first article on this subject appeared in the issue for February 7.

Turning, however, from this branch of our subject, we have yet another source of information from which to draw in our efforts to show the Persian Garden in antiquity. That facile linguist, Viscount Strangford, once wrote to Professor Max Müller as follows :—“ The words you mention are all true Persian—*ward* unquestionably so ; but whether the old Persian form *ward* be the origin or the issue of the Greek *ῥόδον,* it is difficult to say, and, perhaps, is more for the botanist to settle than the philologist. *Gul* means flowers generally in modern Persian, *gul-i-surkh* being a Rose.” Now this word *Gul* has given us Gulistan, and the phrase, *In Gulistan est* is translated : “ This is a garden of Roses.” Though the term Persia appears not to date from an earlier age than that of Cyrus, we yet know that as soon as the Persians began to play a part in history they attracted attention by their love of flowers and fruits, gardens and orchards, groves and plantations. When the Jewish exiles in the time of Sennacherib went from Palestine to the country now known as Persia they found themselves in a land of gardens. Similarly, writing of Baghdad, in 1164, Benjamin of Tudela states : “ The palace of the Khalif at Baghdad is three miles in extent. It contains a large park filled with all sorts of trees, both useful and ornamental, and all kinds of beasts.” It was, indeed, an exact replica of the early Paradise. He adds that the city was in those days three miles in circumference, and states : “ The country in which it is situated is rich in Palm-trees, gardens, and orchards ; so that nothing equals it in Mesopotamia.” When Herodotus visited Persia he observed that when a Persian was about to offer sacrifice he wore on his head a tiara garnished chiefly with Myrtle ; and adds that when the news reached the Persians that Xerxes had taken Athens, it caused so great joy “ that they strewed the streets with Myrtle, burnt perfumes, sacrificed, and abandoned themselves to pleasure.” They were thus as familiar with the Myrtle as they were with the Rose and Lily, the Peach and Date, the Orange and Lemon. It should be noted that the name Baghdad is derived from *bagh,* a garden. The Persians, therefore, had their Garden City.

I do not know any work which breathes the atmosphere of our subject more naturally than Moore's famous poem entitled “ Lalla Rookh.” “ Seldom had the Eastern world seen a cavalcade so suburb. From the gardens in the suburbs to the Imperial palace it was one unbroken line of splendour. . . . Through the streets groups of beautiful children went, strewing the most delicious flowers around, as in that Persian festival called the Scattering of the Roses (*Gul Reazee*), till every part of the city was as fragrant as if a caravan of Musk from Khoten had passed through it.”

These are but gleanings in a vast field, the whole of which it would be impossible to survey if due regard is to be had to the other nations of antiquity, such as Assyria, India, and China ; and if these, as well as Egypt, Greece, and Rome, are to have their due meed of attention. *Hilderic Friend.*

PLANTS NEW OR NOTEWORTHY.

JASMINUM BEESIANUM.

By the colour of its flowers, which are of a deep rose or pink, and on some plants nearly white, Jasminum Beesianum is distinct from other members of the genus, the flowers of which are usually yellow or white. Although it can hardly be considered beautiful, its floral colouring makes it an interesting plant. As is the case with many other members of the family, the flowers are sweetly-scented, although perhaps not so strongly as those of Jasminum Sambac, or the well-known J. officinale.

The genus Jasminum is noted chiefly either for the beauty or fragrance of its flowers, and not for the attractiveness of its fruits, but what J. Beesianum lacks in beauty of flower it makes up with its fruits; for it can be very attractive when laden with its glossy, black berries, which remain on the bush during the winter, looking very conspicuous among the small, simple, short petioled, ovate or lanceolate leaves. Often the berries remain on when the leaves have fallen; for although the plant has a tendency to be evergreen where it is sheltered, when it is exposed the leaves fall during the winter.

The genus Jasminum is closely allied to Ligustrum, differing in the position of the ovules, and more less deeply two-lobed ovaries. Frequently only one carpel develops, but in Jasminum Beesianum both ovaries usually develop, and the berries are in pairs as may be seen in the illustration (Fig. 52) of a spray taken from a plant growing here on a north-west aspect, where it fruits freely every year.

J. Beesianum is a native of Western Szechuan, growing along ravines at an altitude of 1,000 to 2,000 metres, and was introduced into this country in 1904. A vigorous, straggling climber, it delights to ramble over a shrub or small tree, and in such position it shows itself off to much better advantage either in flower or fruit than when left to ramble about over the

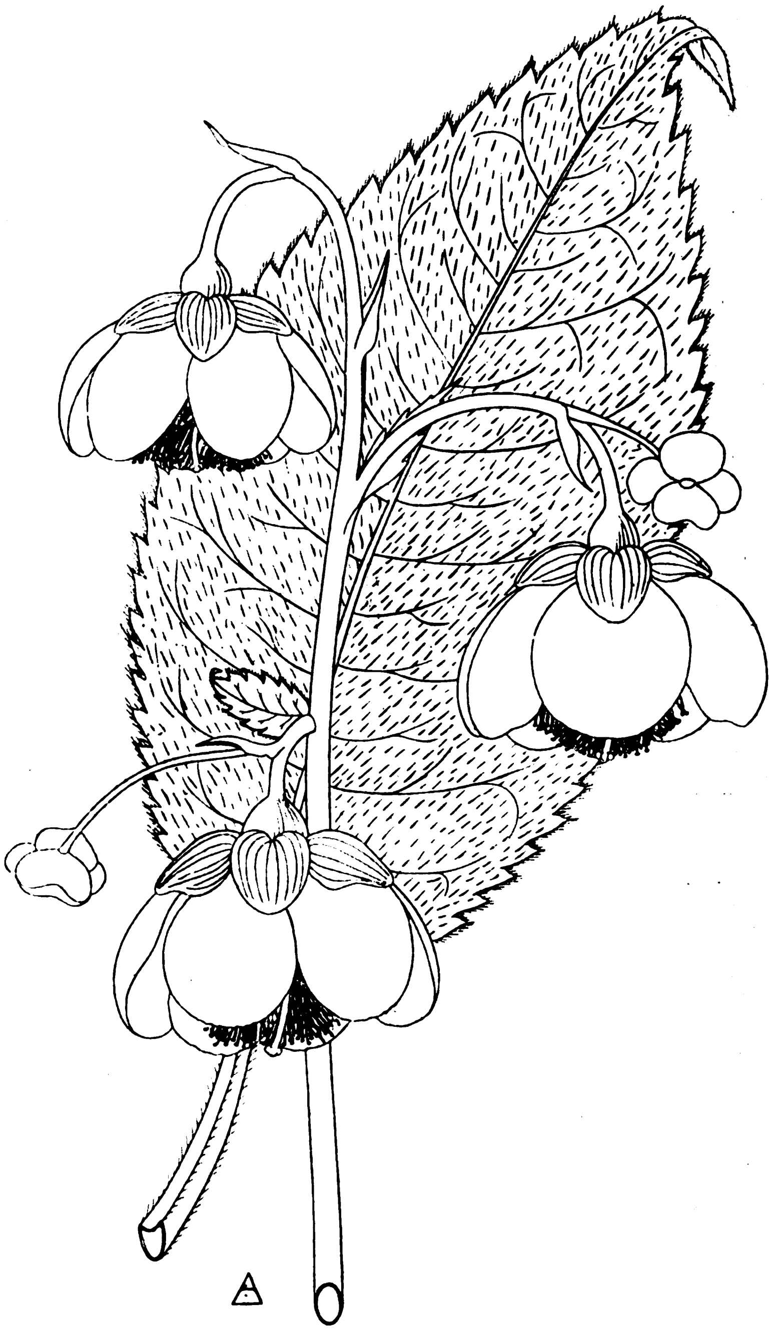

FIG. 53.—DEINANTHE CAERULEA.
(see p. 132.)

ground. It will root quite freely, either as cuttings or layers, and it is readily raised from seeds. *F. G. Preston, Botanic Garden, Cambridge.*

DEINANTHE CAERULEA.

Deinanthe caerulea (Fig. 53) is the Chinese representative of a small genus of the Order Saxifragaceae and its botanical position in this Order is in the tribe Hydrangeae. This species was sent to Europe by Prof. A. Henry who discovered it at Hingshan in the province of Hupeh. The specimens he sent were considered identical with Deinanthe bifida, the Japanese member of this small genus. Later, however, Mr. E. H. Wilson introduced the same plant to cultivation, having found it in wet places on cliffs at Nant'o in Hupeh while he was collecting for the Arnold Arboretum and it proved distinct from D. bifida.

Some seeds were secured by the late Mr. H. J. Elwes, who raised plants at Colesborne, where the species first flowered in England during August, 1909. Mr. Elwes found that this perennial herb preferred a moist, shaded position and grew more vigorously planted out under a north wall than when cultivated in pots.

The average height of the plant is about one foot and the stems rise from the end of a stout, horizontal root-stock. The broadly ovate leaves are very coarsely toothed and vary from four to ten inches in length. They are somewhat hairy on the surface, but glabrous beneath, save for a few hairs along the mid-rib. Sterile flowers are few and small, half-an-inch or so across and blue, while the fertile flowers are much more important, each having five rounded sepals and from six to eight rounded, concave, blue petals, enclosing a large number of blue filaments and anthers. The fertile flowers are nodding, but very showy. The whole plant is interesting, as the leaves are grouped in pairs at the top of the stem while the branched panicle is terminal.

NOTICES OF BOOKS.

Railway Economics.

During the twenty years, more or less, which have elapsed since the first publication of Sir William Acworth's little text-book, of which the present* is a new and revised edition, more revolutionary and far-reaching changes have been effected in railway management and procedure than would have been dreamt of by the author or by anyone else at the beginning of that period. The railways have been "nationalised" and "denationalised"; rates have soared to heights beyond the wildest imaginings of the framers of the former maxima; dozens of small, and some of the largest, companies have lost for ever their identity in combines of vast magnitude. Many of these phenomena are due, directly and indirectly, to the war; they interest and concern everyone, for there is no member of a civilised community, even though he may seldom actually travel, who does not depend upon the railway for most of the necessities of life.

The decisions of the Rates Advisory Committee however, appointed in 1920 by the Ministry of Transport, on the question of classification of goods, interest the readers of *The Gardeners' Chronicle* in a particular sense, inasmuch as the classification of nursery produce of all kinds, especially since the increase in charges, had weighed very heavily on the nursery trade, and many anomalies existed. Fortunately, the trade, through the Chamber of Horticulture, was able to prevail on the Committee in preparing its new scales to remove the worst of the hardships previously suffered, and the result of the negotiations was the placing of certain classes of nursery produce in very much more favourable charge-scales than had hitherto been the case.

The book in question does not, naturally, deal in detail with each class of produce, but it covers the whole field in a general way, and the author succeeds in making very interesting to the layman a subject which, highly technical as it is, might easily have been carried above his head. A completely new and interesting chapter deals with "Railways in the War," and another on "Passenger Traffic" closes the book, which we can commend to any of our readers as well repaying the time spent in its perusal.

How to Sue.*

In every trade, however vigilant the principals, however conscientious the customers, there come times when payments hang fire, when accounts are sent out again and again without effect, when apparently "safe" customers begin to evade their obligations, and some aid other than one's own persuasions seems necessary. In the nursery trade it is especially important that payment should be obtained promptly and regularly, because the goods supplied are so largely the result of wage-labour, which has, of course, to be paid weekly, and admits of no delay. Where goods supplied can be had on long credit, there is no hardship in permitting long credit to customers; but in the nursery trade only a tiny fraction of the goods supplied can be obtained in this way, and slow payers have finally to be sued. At this stage, one is frequently deterred by the complications of the procedure in county courts, or by the fees which are charged by a solicitor who undertakes the duty, and it is here that the little book under review would be very useful. Written by a solicitor well versed in county court practice, it takes a would-be plaintiff step by step through each part of the procedure, providing for every contingency which is commonly likely to arise. Apparently chiefly written for London tradesmen, it would apply to anyone within reach of a county court, and is well calculated to smooth the otherwise rather thorny path of litigation.

PUBLIC PARKS AND GARDENS.

The Ministry of Home Affairs has held an inquiry into the application of the Warrenpoint Urban District Council for a provisional Order to acquire certain land for providing a recreation ground, and for sanction to a loan of £2,500 to defray the expenditure. During the course of the inquiry it transpired that for the £2,500 the Council would only have the ground and a shelter, and that it would be necessary to apply for a supplemental loan for the provision of tennis courts, a bowling green, an athletic track, a football pitch, etc., the entire scheme being estimated to cost £5,210, of which it was estimated £1,210 would be obtained in respect of an unemployment relief grant.

The Urban District Council of Purley has received sanction from the Ministry of Health to borrow £7,350 for the purchase of land for public walks and pleasure grounds; £5,800 for the Higher Drive recreation ground, and £1,500 for Coulsdon Memorial ground extension.

The Portsmouth Corporation will make application to the Ministry of Health for sanction to borrow £15,240 for making up the proposed playing fields at Great Salterns, and for the appropriation of land in question for educational purposes.

GOVERNMENT BOTANIC GARDENS.*

Concluded from page 109.

It is fair to remark that one of the "scientific" objections to botanic gardens is that for work of this kind such institutions are needlessly expensive instruments; that equally good results may be anticipated if the work of exchange and cultural experiment be entrusted to cultivators who are not botanists. Natural affection, we have seen, induces a "botanist" so renowned as Roxburgh to express this very view. The technical portion of the task no doubt can be provided for. But, if exchanges of plants are to be of permanent value, there must be an assurance that the plants transmitted are precisely identified. This can only be assured when the plants imported by a distributing centre where there is no "botanist," have come from a botanic garden; or where those despatched from such a centre are received by a botanic garden. It is also fair to admit that in certain European scientific circles it has at times been urged that the day of botanic garden exchanges of useful plants is over, and that now the work of the plant breeder should replace that of the field-observer. But this is not claimed by the student of genetics, whose work is nowhere more highly valued than in a botanic garden. Nor is it claimed by those interested in plant-breeding and plant-importation in America, where the affection for the nineteenth century habits of thought, still characteristic of Europe, has died out.

The records of the garden founded by the Government of Madras at Marmalon illustrate the conditions under which the "phytologist" who is not a "botanist" has to work. In 1786, the year in which the Calcutta Botanic Garden was founded, Dr. James Anderson happened to observe on a "Nopal" plant some cochineal insects. He did not know, and we may never learn, whether the insect he noticed was that which supplied the *grana silvestris* of commerce; it was clear to him that it was not the true cochineal which supplied the *grana fina* then in demand in the trade. Nor did Anderson know whether the "Nopal" on which he observed the insect was that on which the true cochineal could be raised. Anderson reported his observation to his Government, and through them recommended that steps be taken by the Court of Directors to introduce the true insect to India. The Court sought the help of the War Office and the President of the Royal Society: plants of the *Cactus Cocci*, as the *Opuntia* required was then termed, were transmitted to Madras from Kew. Writing on February 9, 1790, to the Governor of St Helena, Anderson said: "Having recommended that the Honourable Court of Directors shall first introduce the genuine cochineal at St. Helena, from whence it may easily and certainly be forwarded here, I send you another box of Nopals by this opportunity of the ship Pigot." Again, on September 15, 1790, Anderson wrote to the Governor: "Understanding that Sir George Yonge, Secretary of War, is establishing cochineal insects at Antigua with a view to transporting them to this country, in consequence of my publications on that subject, I have forwarded a dozen more Nopal plants that you may have abundance in readiness for their reception." A letter of September 14, 1790, asking Government authority to place these plants "on board the Houghton under the care of Capt. Munro," tells us that the plants were "twelve Kew Nopals." In that letter Anderson adds: "You may acquaint the Honourable the Directors, from my own inspection of the garden there [Marmalon], that it contains fifteen hundred very thriving plants of the Kew Nopal, many of them in flower, which might, if necessary, be immediately multiplied into as many thousands." The plants reached St. Helena safely; another letter to the Governor of St. Helena, dated February 15, 1791, says: "I am favoured by this Government with your acknowledgment of the receipt of Nopal plants, which I have forwarded on different ships, and am happy to learn they are in so thriving a condition to supply an article of vegetable food for the inhabitants of St. Helena, for Covent Garden is not better supplied with Asparagus than the markets of the kingdom of Mexico are supplied with the tender tops of Nopals which are every day brought to table."

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* *The Elements of Railway Economics.* By Sir William M. Acworth, K.C.S.I., M.A. New Edition. Oxford. The Clarendon Press. 3s. 6d. net.

* *County Court Practice made Easy,* or Debt Collection Simplified. By a Solicitor. Fifth Edition. London, Effingham Wilson, 16, Copthall Avenue, E.C. 2. Price 4s.

* The Sir George Birdwood Memorial Lecture, delivered before the Royal Society of Arts (Indian Section), on Friday, January 9, 1925, by Lt.-Col. Sir David Prain, C.M.G., C.I.E., LL.D., F.L.S., F.R.S., late Director the Royal Botanic Gardens, Kew.

One consequence of Anderson's publications regarding cochineal was that Bengal became as interested in this adventure as Madras. The first volume of the *Calcutta Gazetteer*, interesting to-day mainly for its news letters from the seat of war in Mysore, and for its local advertisements, contains among the latter an intimation that a "Nepaulry" was for sale. It did not find a ready purchaser, for the notice had to be repeated with an assurance that the plants were ready to receive the insect. The speaker, in his early days in India, did not know what a "Nepaulry" was, and, so completely had the term disappeared, could obtain no information from more experienced friends. He wrote therefore to Sir George Birdwood, and, needless to say, had his difficulty cleared up by the return mail.

At what date the insect reached Madras from St. Helena, the records do not say. Anderson, though grateful for the sympathetic help given him, was then preoccupied with other duties, for he added, in writing to the Governor of St. Helena, who was also President of the Planters' Society there: "The importance of the war here prevents my writing to my Government, who have duties of a very different nature to expect from me at present, but you may acquaint the Society that next year . . . . . . it is my firm intention to shower the most choice productions of Asia upon their island."

Thus, on February 15, 1791, did Dr. James Anderson express the spirit that always has guided and, doubtless, always will inspire, those whose privilege it is to be connected with an Indian Government Botanic Garden.

FRUIT GARDEN.

THE BEST EARLY APPLE.

Seasider's notes (p. 43) on this subject should evoke much discussion: in the first place because the season "early" is a wide one, as he himself exemplifies; and in the second place because the flavour and texture of flesh which make strong appeal to one consumer hold out no such enticements to another. In my opinion the variety Mr. Gladstone, eaten off the tree, and Beauty of Bath, are the best of those mentioned, but the latter has a fault beyond that of throwing its fruits mentioned by your correspondent, namely, slowness in coming into profitable crop on strong soil, even on Paradise. Both are commercial varieties of decided importance. Of the rather later "earlies" named, Langley Pippin and St. Everard, the latter especially, are exceptionally rich in flavour; neither can, however, claim to take rank with the satisfactorily growers or the big croppers, at least such is my experience on a rather cold, strong loam over heavy clay; on warmer land they may be more generous in these respects. *Seasider* does not mention Owen Thomas (Cox's Orange Pippin × Mr. Gladstone) for August to September; colour, size and flavour are so good with me that I think it has a future. *W. T.*

APPLE IRISH PEACH.

ONE sentence in Mr. Chapman's letter (p. 81) regarding this valuable early dessert Apple calls for comment, and excites inquiry. He accuses the variety of being a poor cropper. This is inevitably the case if the trees are spur-pruned, but my experience has been that it is one of the most regular and abundant croppers where its particular habit of bearing on the tips of the previous year's growths is duly regarded.

In some gardens I have visited I have seen these growths cut off year after year, and the season's crop with them. At Bessborough the pruners were always instructed to leave the trees of Irish Peach for my personal attention, and my method was to thin out the lateral shoots each year, and in doing so to cut out, so far as possible, only those which had no fruit-bud showing at the tip. The laterals left to fruit in any one season may then be cut right back the next, and this method preserves the general symmetry of the tree, besides ensuring a constant development of young shoots with their terminal buds for the following season's crop.

One other point regarding Irish Peach is that bullfinches are very partial to the buds of this variety, and will attack them when quite dormant, in January, as well as during the more usual period of attack, which, in the case of Apples, is just as the cluster opens and the flower buds become separately visible in April

In common with most other varieties of Apple, Irish Peach succeeds better in certain districts than in others, but, even so, it may serve a useful purpose to emphasize the above characteristics of this early favourite. *T. E. Tomalin, Stansted Park, Emsworth.*

APPLE ST. EVERARD.

THE remarks by your correspondents on the best early Apples should serve to draw the attention of growers to some of the newer early varieties, of which St. Everard is undoubtedly the best. James Grieve is a good Apple, but rather large for dessert purposes and more suited for exhibition. Langley Pippin is one of the newer and little known early varieties, and so is Owen Thomas, raised by Messrs. Laxton Bros. There is still scope for raisers to give us a really good first-early Apple. *G. F.*

THE YELLOW PERSHORE PLUM.

Mr. H. W. STENNING (p. 81) remarks on the localised culture of the Yellow Pershore Plum, commonly known as Pershore Egg. When on a visit to Worcestershire last summer I was told that it is only in the Pershore area that this variety really thrives. It is more than probable that the attempt to grow it has been made in other fruit-growing districts without much success. The chief reason, however, why it is not much grown elsewhere is that what the trade calls "coloured" Plums make much higher prices.

The Pershore Egg Plum is always cheap. In 1922, when there was a glut of Plums, Pershore Egg could hardly be given away, whereas other varieties sold freely enough to be very profitable. Last year, when Plums were scarce, the Pershore variety bore no better than others—in fact nothing like so well as Czar did in some places. Personally, I should be sorry to plant it.

On the other hand, I think there are excellent prospects for those who plant the newer variety Pershore Purple, as many market growers have done in recent years. I have put in a good many maiden trees in the past two years, and they are growing splendidly; but of course I have yet to wait for the fruit. The variety is said to be very prolific, larger than the Yellow Pershore, and with the added attraction of purple colour. It seems likely to replace Victoria as a mid-season Plum in districts where silver-leaf disease makes the culture of this variety almost impossible. *Market Grower.*

POTATO BREEDING.

(*Continued from p.* 114.)

HEREDITY IN THE POTATO.

HAVING acquired a clear conception of the points of an ideal variety, the next step is to search for means of producing new seedlings which most nearly approach this ideal. It is necessary, therefore, to study shortly the results of experience in breeding, and the definitely established facts concerning the nature of inheritance in the Potato.

A critical examination of the characters transmitted from parents to offspring seems to indicate that these characters are not always inherited as independent units, but that there are definite associations of them which are practically always inherited together, so that if one member of a group is found the others may be expected. A knowledge of these correlated characters is necessarily preliminary to further investigations regarding heredity in the Potato. It must be kept in view, however, that these apparently associated characters may be merely different manifestations of the same thing.

Observations of the haulm indicate that height of foliage is intimately connected with maturity; early varieties are for the most part low growing; late sorts, on the contrary, are tall, while mid-season varieties occupy an intermediate position. Blight resistance would also seem to be associated with maturity, earlies being susceptible and lates resistant. Within the various maturity groups there is a definite connection between the number of stems on the plant and the number of tubers produced; the more numerous the stems—especially when these are thin—the more numerous the tubers, which, however, become smaller with the greater frequency.

Hard tuber-flesh is associated with good keeping quality, blight resistance, and cooking quality; soft flesh, on the other hand, is correlated with opposite characters. The greater the proportion of cortex to pith in the tuber, the greater the content of dry matter, crude fibre, and starch.* Deep eyes have not been found on Pear-shaped tubers and are mostly confined to round varieties. The recess at the heel end of the tuber is also a feature of shape, being always found on round varieties, its depth appearing to be correlated with the depth of the eyes.

The conception that the setting of natural berries is correlated with low yields has not been scientifically established, and a recent work† seems to show that in most tested varieties the cutting of flowers, instead of increasing the yield, actually decreases it.

The observations of Snell‡ have established a definite connection between sprout and flower colours, pink sprouts being associated with white and red-purple flowers, or blue sprouts with white or blue-purple flowers. White sprouts (*i.e.*, very faint pink) are correlated with white flowers and colourless stems. Apparently, the development of pigment throughout the plant cannot be dissociated from the sprout colour. Müller§ has further indicated that the development of streaks of colour in the flesh of the tuber is also connected with the sprout colour; where the sprout is white such streaks never appear. Again, it has been observed that the appearance of pigment on the skin of white tubers, when these are exposed to light, depends on the degree of the sprout colour, being most intense on blue sprouted varieties. As this is a very undesirable trait, seedling varieties with blue sprouts should be tested for it at an early stage.

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* Früwirth C. *Handbuch der landwirtschaftlichen Pflanzenzüchtung.*

† Snell, Dr. K. *Blütenbildung und Ertrag bei der Kartoffel.* 1923.

‡ Snell, Dr. K. *Kartoffel sorten*, 1922.

§ Müller, K.O. *Zur Kenntnis der Factoren der Anthozyanbildung bei der Kartoffel.*

Theoretically, it should be possible to obtain by continued self-fertilisation varieties which are pure (homozygous) and will breed true to type. Self sterility, however, is a disturbing factor, and it is not easy to obtain desirable characters and fertility in the same seedling. Nevertheless, this is a line in Potato breeding which has been largely neglected, and which still offers a definite and promising field of work.

On the other hand, the above system takes time for its completion, it being estimated that five generations of inbreeding are necessary before anything approaching a pure state can be attained. The breeder desires quicker results. Genetic analyses have been made of various varieties, and from these it is evident that the Potato is a plant whose characters "Mendelise." However, the authorities who have carried out experiments on heredity in the Potato have worked hitherto with comparatively little material; in consequence, sweeping assertions or assumptions cannot be made, and the best that can be done is to indicate the characters which so far appear to be inherited in a more or less regular fashion.

Salaman[*] has found the undernoted characters to behave as described:—

(1) *Tuber.*—The tuber shape has been found to depend essentially on the presence or absence of a single factor for length. According to this hypothesis a variety may be pure (homozygous) round, pure (homozygous) long, and impure (heterozygous) long. The rounds breed true to type and are recessive when crossed. Pebble, oval and oblong varieties are hybrids.

(2) *Stolons.*—Very long stolons and very short stolons breed true for length. Varieties with medium stolons, when selfed, give rise to families whose stolon lengths vary from short to long.

(3) *Tuber Eyes.*—The deep eye is recessive and breeds true; the superficial eye is dominant.

(4) *Flower Colour.*—For the development of colour a colouring (chromogen) body is necessary. A reddening factor is necessary for the development of red purple and a purpling factor requires to be added to these before blue purple is developed.

(5) *Immunity to Wart Disease.*[†]—(*a*) Immunity is dominant to susceptibility; though this dominance may be inhibited by other factors.

(*b*) There are four types of immunes—

1. Pure immunes.
2. Immunes giving fifteen immunes to one susceptible on selfing.
3. Immunes giving three immunes to one susceptible on selfing.
4. Immunes giving nine immunes to seven susceptible on selfing.

(*c*) Susceptibles may be various sorts—

1. Due to the absence of either of the immune factors, x or y.
2. Due to the absence of the complementary factor, z, though either x or y may be present.
3. Due to the presence of an inhibitor of the immunity factor.

The behaviour of the various characters on crossing cannot be predicted with any certainty unless the genetic composition of the parents has been previously ascertained. The tables to be given in the next issue will indicate how some characters behave in cross-fertilisation. It must be remembered, however, that these statements are based on limited observations. *Thomas P. M'Intosh, B.Sc. (Agric), Edinburgh.*

To be continued.

VEGETABLE GARDEN.

VEGETABLES FOR EXHIBITION.

(*Concluded from page* 114.)

The best Cauliflowers are those of moderate size, clean, and cut before the curds commence to open out. The leaves should not be trimmed off until the Cauliflowers are staged, and then the curds should be covered with paper until the time has arrived for judging.

Among Cabbages, preference should be given to those of moderate size, with conical heads, and not too hard. Savoys do not gain many points at shows until November.

Tomatos are of great value in collections, and for single dishes all the fruits should be as nearly one size as possible, fairly large, always presuming they have no ugly centres, and of good form and colour.

Cucumbers are often shown in a coarse and old condition; quickly grown fruits that match each other, and of deep green colour, with the bloom intact are the best. Cucumbers with swollen ends and large "handles" never win prizes unless very inferior samples are shown against them.

Vegetable Marrows should also be of moderate size and carefully selected. The skins should be clear and fresh looking.

Globe Artichokes are valuable for early collections if quite fresh and succulent. Leeks and Celery are now shown well so early as August, but the latter must be large, clean, and well blanched to be of assistance at early shows. No collection of vegetables is complete without a dish of Potatos.

It is unwise to mix up collections of vegetables as it is so often done at the smaller shows. It is best to keep each kind together so that their value may be properly estimated; the only exception being Celery, of which an equal number of sticks may be placed on each side of the collection. Carefully surround each dish with matured Parsley and endeavour to create as favourable an impression as possible.

To produce the finest vegetables, deep cultivation, much hard work, care and attention are necessary. In good soils Potatos usually do well and produce plenty of tubers suitable for exhibiting. Whilst each variety may be said to have a show value, there are certain sorts that are invariably even and of handsome appearance.

It is remarkable that last year when the season was unfavourable to a good crop of Potatos there were produced in some districts some of the finest exhibition tubers ever seen, while in others good, clean samples were rare. The best Potatos, like many other vegetables, are obtained from plants that make quick growth; those that are planted too early and receive a check rarely provide such bright tubers as are produced under quick growth.

Early planting is, of course, subject to the weather and position. Seed sets of medium size should be selected, set up in boxes, and carefully sprouted, reducing the number of eyes to two. Such tubers will produce handsome Potatos when planted towards the end of April. Potatos grown specially for exhibition should have plenty of room for development.

Fresh manures from the stable or farmyard are not suitable for Potatos; old Mushroom-bed material, or good rotten leaf-mould is better. Phosphates add to the brightness of their skins in the same way as sandy soil does, but tubers from heavy soils lack that brightness which quick growth in good, sharp soil produces. When lifting the crop, carefully select the finest tubers and exclude light and air from them as quickly as possible.

A dish of good Peas should be included in every collection of show vegetables during summer and autumn. Choice samples are frequently gathered from rows treated in the ordinary manner, but, as a rule, those exceptional pods to be seen at most shows are not so obtained. The finest pods are to be had from thinly-sown plants that have only just arrived at bearing stage, therefore, pods forming before they are required should be removed up to about ten days before the show. This is not a wasteful proceeding, and is often done under ordinary conditions to retard the crop. If one or two good-sized rows cannot be treated extra well, then be content with a small sowing and see that the soil about the roots is always in a moist condition. Liquid manure, which is rich in phosphates and potash, should be given the roots freely when the soil is fairly moist.

Culinary Peas treated in the way I have suggested will produce extra-large, well-coloured pods well filled with fine Peas, and if the pods are gathered with the dew on them, laid carefully on clean paper and kept cool, they will be in fine condition on the show morning.

Much that has been said concerning Peas is also applicable to Broad Beans. The pods of these should be long, straight, well filled and fresh. The plants should not be allowed to become exhausted long before the pods are required. To produce exhibition pods, thin the crop freely, give the roots plenty of liquid manure, and apply a mulch of some kind so soon as the soil has become warmed by sunheat.

French Beans may be shown in July or even earlier, long before Runner Beans are available. The pods should be long, straight, of even size, and tender. Thin the pods freely until about seven or eight days before they are required.

Such varieties of Runner Beans as Colossal and Perfection should receive the same liberal supplies of liquid manure as Peas, and only the best formed pods should be left on each cluster.

Onions constitute a most important dish in collections at shows, and specimens under two or three pounds in weight are not likely to win. Although such large bulbs are not in much demand for culinary purposes the desire to grow large Onions is ever on the increase, even though the labour necessary to produce them is out of all proportion to their value.

The best and cleanest Carrots are produced on a light, sandy soil that has been manured freely for the preceding crop. In the case of strong, heavy ground, unless boring holes is practised, only coarse, ugly roots are produced. Handsome samples of Scarlet Perfection may be drawn from ordinary rows in the open ground if the plants are thinned carefully and treated liberally.

Young Tomato plants usually produce the finest fruits; if they are given occasional top dressings of good compost to encourage root action, cropped lightly, and treated liberally, they will continue to produce fruits of fine size and colour.

Celery is a most important item in large collections. The plants need the most careful attention in their early stages, and transplanting should not be unduly deferred, as crowded seedlings are a long time before they re-commence active growth. Liberal waterings and feeding with liquid manure are necessary to produce the best results. Soot dusted freely over and about the plants acts as a fertilizer, and also serves to keep slugs and the Celery fly away.

Good cultivation is necessary to produce Cauliflowers, Turnips, and all other exhibition vegetables, and only by careful attention to numerous details can they be brought to perfection. *F. Jordan.*

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[*] Salaman, Dr. R. N. A Lecture on The Hereditary Characters in the Potato. *Jn. Hort. Soc.* 1912-13.

[†] Salaman, R. N. and Leslie, J. W. Genetic Studies in Potatoes. The Inheritance of Immunity to Wart Disease. *Jn. Genetics.*

HOME CORRESPONDENCE.

Daphne Laureola.—Can there be two varieties of Daphne Laureola? Your note in the issue of January 31 refers to it as having no odour. As it grows naturalized in the wild garden at Wisley, in the woods on the Surrey Downs, and as I knew it in my boyhood in the Essex woods, the flowers are very sweetly scented, yet I have read elsewhere of its lack of scent. The bruised bark is peculiarly unpleasant, as those who cut shoots for the house know, but that odour passes and leaves the sweetness of the clustered, green flowers in all the forms I have come across. *Fred. J. Chittenden, R.H.S. Gardens, Wisley.*

The Royal Horticultural Society's Amateur Show.—Mr. A. J. Macself (see p. 40) observes that:—"For a number of years past it has been noted with regret that exhibits from private establishments have dwindled almost to the vanishing point, both at the ordinary fortnightly meetings and the larger shows at Chelsea and Holland Park," He goes on to state that the same is true of provincial shows, where, except in the cottager and allotment holder's classes, amateur's exhibits are almost a negligible part. He considers that a combination of contributary causes has made it impossible for private gardeners and amateur enthusiasts to devote that time and effort to growing for shows which they were formerly able to give. I cannot agree with this in so far as the person whom I know as the amateur is concerned. I am dealing in this note with the question as a whole, and I wish to point out the necessity for putting the "private gardener" in a class by himself. Is the proposed show strictly for the amateur at all? The title of the show—in so far as the principal classes are concerned—is, I think, absolutely wrong. What is an amateur? The definition of the word is—"one who cultivates a particular study or art for the love of it, and not professionally; in general terms, one who plays a game for pleasure, as distinguished from a professional who plays for money. Nearly every game has its special definition to meet its own requirements." Now, let us examine the schedule. The R.H.S. definition of an amateur is:—"No person shall be permitted to compete as an amateur who gains any part of his livelihood by growing for sale, or for an employer, flowers, fruits, vegetables, plants, seeds, grafts, cuttings, bulbs, buds, etc., nor any person in the employ of a nurseryman. Any objection raised as to the rightful qualifications of an exhibitor shall be referred to the Council of the R.H.S., whose decision shall be final." The schedule next points out that (a) Classes for twelve vases or pots are open to all amateurs; (b) Classes for six vases or pots are open for those amateurs whose garden wage bill amounts to not more than £4 a week; (c) Classes for three or four vases or pots are for those amateurs who employ no permanent gardener. Despite this the title of the show in the schedule and in the publicity announcements of the R.H.S. is "Amateur Flower Show." In my opinion the only legitimate classes in such a schedule are those under heading "C." Take, for example, the classes for twelve vases or pots which are open to all amateurs. I suppose a gentleman with an establishment employing a dozen gardeners will be allowed to compete in these classes! He exhibits, of course, in his own name, but his produce, nevertheles, has been grown by men who can only be termed professionals. If such competition be permitted, how can the show be called an "amateur" show? In Scotland our leading societies have classes which permit of a strong differentiation between nurserymen, gardeners, and amateurs. Classes are provided for private gardeners, but in many cases the amateur is allowed to compete in them. Every encouragement is given to the amateur. The R.H.S. system of allowing gentlemen who employ several gardeners to compete as amateurs is wholly unfair to the *bona-fide*, non-professional gardener—*i.e.*, the man who loves his garden and his flowers, the man whom everyone who wishes to see horticulture progressing wishes and hopes to encourage. I think that the time has come when a great society such as the R.H.S. should give more recognition to the genuine amateur, and give him a well defined opportunity of showing his flowers and fruits at its various exhibitions. Why not put the private gardener in his proper place and give him his proper status? Is it not absurd to allow his master to compete as an amateur and to compel him—if he wishes to exhibit in his own name—to compete as a professional? I think our Scottish system is the fairest all round. The real amateur is a person who deserves every consideration from the R.H.S. He is a strong supporter of the society, and he is the backbone of modern horticulture. In closing, I should like to refer to the lamentations of Mr. Macself on the almost negligible part now played by private gardeners. He is, unfortunately, right. Modern conditions are responsible. But if the private gardener is rapidly passing as a force at our great shows his place is being taken as rapidly by the amateur—where he gets a chance. Let Mr. Macself go to such a show as Glasgow; let him consider the wonderful amateur exhibits; let him compare them with those at any other show in the country for number; let him examine the quality. He will surely be convinced that, given an opportunity, the amateur can more than justify himself. Why do other societies not give the same encouragement as the now famous one in the West of Scotland. The finest competition in Britain is to be seen in Glasgow to-day, thanks to a wise system of collaboration between the gardener and the amateur. *George M. Taylor, Edinburgh.*

A Carnation Competition.—The Carnation competition referred to on p. 79, organised by Messrs. Allwood Bros., is interesting. It is stated there were 38,000 entries. I presume Messrs. Allwoods were the judges. I have grown Perpetual-flowering Carnations myself for a good many years, even before Messrs. Allwood Brothers started, so I think I know what constitutes a good variety. I agree that Mary Allwood is a good Carnation and would not have been surprised to see it head the list, although I have found poor stocks of it in some places, as a result of over propagation If Mr. Dutton or Messrs. Stuart, Low and Co. were to conduct a competition on similar lines amongst their customers, one would expect totally different results in each case. Competitions on these lines would always give credit to some varieties that are quite undeserving. If a flower girl, on a good pitch in the west end of London, had a bunch of Edward Allwood and a bunch of the original Enchantress (without any "Supréme"), I guarantee Enchantress would be sold out before Edward Allwood. *Grigor Roy, Bridgwater.*

——Carnation growers are indebted to Messrs. Allwood Bros. for their efforts to popularize the Carnation. One of their recent efforts on behalf of their favourite has been the "Carnation Competition" referred to in your issue of January 31st. When I read the results I must confess the figures somewhat staggered me; they seemed to be like the records of a Beauty Competition. If I had not known that the firm advertises itself to be the leading Carnation Raisers and Specialists in the world, and that with such a reputation to uphold they would not overstate a case, I should, perhaps, not have taken any notice of the result. As it is I am certainly very pleased to see that so many as 38,000 entries were registered. This leaves no doubt as to the popularity of the Carnation to-day. I am chiefly interested in the Perpetual-flowering varieties, of which class I grow quite a number commercially, and here the results are somewhat surprising. Only three American-raised varieties are in the running; there is one raised by Messrs. Stuart Low and Co., and eight by Messrs. Allwood Bros., a most wonderful and gratifying result from these British raisers' point of view. However, what I should like to know, and doubtless Messrs. Allwood Bros. can enlighten me on this point, is this; were these selections made by gardeners and amateurs who grow the varieties, or by the general public at exhibitions, etc., where they saw a few flowers only, or were they made from Messrs. Allwood's catalogue, and simply from the descriptions therein? It occurs to me that the last happened in some instances, and this would make the competition of considerably less value. My reason for thinking so is this: The variety George Allwood received 7,640 votes; these votes must have been given before the end of December, 1924, and yet the variety was not sent out until the spring of 1924, at 5s. each, according to Messrs. Allwood's 1924 Catalogue. If every voter only possessed one plant, and everyone possessing one plant voted for it, this was quite a nice little batch to send out of a novelty, and the growers were certainly not long in making up their minds about its value. Perhaps Messrs. Allwood Brothers will tell us whether entry forms could be obtained *ad lib.* for this competition. *C. Engelmann, Saffron Walden.*

Proposed Presentation to Mr. J. S. Brunton.—At the recent General Meeting of the British Carnation Society the members agreed that some tangible token of appreciation of Mr. Brunton's nineteen years' Chairmanship of the Committee should be presented to him on his retirement, and as one of the sub-committee elected to deal with the proposition, I appeal to those lovers of Carnations who may not have been approached from other sources to help make this testimonial worthy of the occasion. In spite of the fact that Mr. Brunton's many duties take him all over Great Britain, the Continent and America, he has proved his devotion to the cause by the fact that during these nineteen years of service he has never once failed to preside at a committee meeting. Subscriptions may be sent either to me at Hanover Square, W. 1; to Mr. C. Engelmann, Saffron Walden; or Mr. W. H. Page, Tangley Nurseries, Hampton-on-Thames. Subscribers names, but not the amounts, will be duly announced. *R. Forester Felton.*

The Late Mr. W. Watson.—The announcement in *The Gardeners' Chronicle* of the death of Mr. William Watson, late curator of the Royal Botanic Gardens, Kew, will have been received in the gardening world with great sorrow. Mr. Watson was undoubtedly a true gardener and had the interests of gardeners at heart. Mention is made of his help in instituting the British Gardeners Association. In this connection I have reason to remember him; although personally unknown to him he wrote to me a very nice letter thanking me for a short contribution I made to *The Gardeners' Chronicle* on this subject, which was then being much thought and talked about. The pride he had in his profession was also shown in an article he wrote to the B.G.A. *Journal* on "Gardens and Gardeners"—I am quoting from memory. In this he stated that the gardener's work was equal to that of a schoolmaster, superior to that of the doctor, and second to none. The spirit which animated Mr. Watson in his profession is rarely found in these days. The news of his decease, as you stated, will be received with sorrow in all parts of the British Empire by those who have served under him. I am proud of the fact that one of my sons served under him, and I have reason to know how highly he was respected and honoured by his pupils now scattered far and wide over the world. *J Corbett.*

SOCIETIES.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

MR. CHAS. H. CURTIS presided over the monthly meeting of this Society held in the Royal Horticultural Hall, on Monday, February 9. Sixteen new members were elected. Five members withdrew £68 5s. 0d. from their deposit accounts, and the sum of £34 2s. 9d. was passed for payment to the nominee of one deceased member. The sick pay for the month on the ordinary side amounted to £136 15s. 5d. and on the State section to £117 19s. 2d.; maternity claims totalled £4. Grants amounting to £10 12s. 3d. were made to four members for dental and optical treatment.

The Trustees were requested to invest a further £1,000. The Committee's report for the year 1924 was approved for presentation to the annual meeting in March. The Committee has decided to hold its Annual Dinner in May, at which the Earl of Bessborough has promised to preside.

GLASGOW FRUIT TRADE BENEVOLENT.

THE fifteenth annual meeting of this Society was held in the Trades Hall, on Monday, the 26th ult., Mr. Joseph Sprout, Kilmarnock, presiding. The Secretary, Mr. H. S. Girvan, reported that the Society continued to make substantial progress, the financial statement showing that the capital account had increased by £217 compared with £121 in 1923. The whole cost of the pensions, as well as the administration of the Society, was £25 less than the income from investments alone. The following office bearers were elected for the ensuing year:—President, Mr. W. E. McCaig; Vice-President, Mr. David Stevenson; Hon. Treasurer, Mr. George Carruthers; Clerk and Collector, Mr. H. S. Girvan. The annual whist drive and dance was held in the Grand Hotel, on the following evening, and was attended by a company numbering 318. The arrangements were in the hands of a small committee consisting of Messrs. Michael Simons, junr., W. E. McCaig, Alick McKay, and Neil Currie, and it proved to be one of the most successful social functions held under the auspices of the Society.

READING AND DISTRICT GARDENERS',

THE first fortnightly meeting of the spring session of this association was held on Monday the 26th ult. Mr. A. W. Gower, Chairman of Committee, presided over an excellent attendance of the members. The lecturer was Mr. M. Goddard, Bear Wood Gardens, Wokingham, who gave an instructive and educational discourse on "The Value of Observation in the Garden." Reference was made by Mr. Goddard to the great value obtained in visiting other gardens, observing the methods carried out and contrasting them with the visitors own practice.

Mr. F. TOWNSEND, Hillside Gardens, Reading, was awarded a First-Class Certificate of Cultural Skill for a magnificent group of Primulas containing such varieties as Stellata Coral Pink, Reading Blue, Crimson King, Reading Pink, Giant Terra Cotta, Pearl, and Double Queen of Pink. A similar award was given to Mr. G. CARTER, Chazey Hill House Gardens, Mapledurham, for a dozen magnificent spathes of Richardia (Arum Lilies) shown at the Annual Meeting.

—— The fortnightly meeting of this Association was held on Monday, the 9th inst., Mr. A. W. Gower presiding over a good attendance of the members. The subject for discussion was "Modern Gladioli," and an interesting discourse on this flower was delivered by Mr. A. J. Macself. The lecturer traced the evolution of the Gladiolus from the days of the old florists to the introduction of the modern primulinus type and its hybrids. Mr. Macself said that April planting was common at one time, but March is sufficiently late for setting the corms, and, if the ground has been prepared in the preceding autumn, February is a suitable time.

In the discussion which followed the following varieties were recommended for planting:—Large-flowered types: Red Emperor, Pink Perfection, Capt. Fryett, Majestic, J. B. Walsh, Mrs. H. E. Bothin, and l'Immaculate; Primulinus type: Alice Tiplady, Salmon Beauty, Jewel, Souvenir, Undine, Orange Queen, and Sonia.

In the non-competitive section, Mr. GEO. CLARK, Dyson's Wood Gardens, was awarded a First-Class Certificate of Cultural Skill for several well-coloured stalks of The Sutton Rhubarb, whilst Messrs. COOPER, Conisborough Avenue, received an Award of Merit for a similar exhibit, but lacking in high colour.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FRIDAY, February 6.—Committee present: H. Ashley-Bell, Esq. (in the chair), Messrs. A. Burns, A. Coningsby, J. Cypher, J. Evans, W. Giles, A. Keeling, J. McCartney, E. W. Thompson, and H. Arthur (Secretary).

GROUPS.

A Silver-gilt medal was awarded to Mrs. BRUCE and Miss WRIGLEY, Bury (gr. Mr. A. Burns), for a group of Orchids in which Lycastes of the Skinneri section were shown in variety.

A. HANMER, Esq., Buxton (gr. Mr. Giles), was awarded a Silver-gilt Medal for a group, including fine examples of Cypripediums, and a special cultural award was granted to the gardener.

S. GRATRIX, Esq., West Point (gr. Mr. C. Branch), staged a group to which a Silver-gilt medal was awarded.

Messrs. J. CYPHER AND SONS, Cheltenham, were awarded a large Silver Medal for a miscellaneous group.

NORTH OF ENGLAND HORTICULTURAL.

THE annual general meeting of the North of England Horticultural Society was held at the Winter Gardens, Harrogate, on Tuesday, February 3. Mr. Herbert Frankling, C.B.E., presiding. The President of the Society, Colonel Sir E. A. Brotherton, Bart., was unavoidably absent.

The report of the Council, presented by the Hon. Secretary, the Rev. J. Bernard Hall, Farnham, stated that the Council, elected September, 1924, had taken over the management from the war-time trustees, and had presented a statement of receipts and expenditure. On January 1, the Society had a credit balance of £83 16s. 5d., and the balance now in hand was £126. Two more Fellows had joined as life members, and the Council proposed to invest the £21 and carry forward the interest each year into the current account. At the April show £25 was received on behalf of the Harrogate Infirmary, and this sum has been handed over to the Treasurer. The Society was much indebted to the members of the Advisory Committee, as the work of reconstruction after the war was made much easier through their willing services. Their friends at Saltaire were the first to rejoin as an affiliated society, and a joint summer show was held on July 8 and 9. The following had been elected hon. life members: Mrs. H. Illingworth, in recognition of her help in raising £55 in 1912 for artists' fees and the first issue of the society's medals; and Mr. J. S. Brunton, in recognition of his past services as chairman of the Council, then as chairman of the five (war-time) trustees, and especially when the existence of the society was at stake from 1916 to 1922 The continued support of the Harrogate Chamber of Trade was very welcome and encouraging. The Council had decided to continue the September show at Harrogate, and had fixed September 16, 17, and 18 as the date. A spring show was provisionally fixed for April 16 and 17.

The Secretary and Mr. Hicks had had an interview with Mr. H. Broome, Chairman of the Royal Botanical and Horticultural Society of Manchester and the Northern Counties, and after consultation with the Orchid Society (an associated society), arrangements were being made to hold a January or February show at Harrogate in 1926, when Orchids would be a special feature. Since the revival of the Society in 1922 four societies had affiliated — the Saltaire Rose Society, the Roundhay (Leeds) Horticultural Society, the North of England Pansy and Viola Society, and the Orchid Society.

The report of the Society was adopted.

Mr. J. S. Brunton said it had been decided to Award a Founders' Silver Plaque annually at the general meeting for merit or distinguished services to horticulture, such as superior culture, achievements in hybridising, literary or research work, investigation of diseases or pests, or for any form of service helpful to the development of horticulture in the North of England Horticultural Society. Mr. Brunton said it was a recommendation of the Council that the plaque should be awarded to Mrs. Bernard Hall for the help she had given, mainly in a secretarial capacity, her husband. The work had been done in an unassuming manner, without thought of reward or fee. The sacrifices she has made on behalf of the Society were deserving of the highest reward. Having instituted the award, it was a graceful act that on the first occasion it should be given to a lady. The Chairman also paid tribute to the work done by Mrs. Hall, and said he had the greatest possible pleasure in presenting the plaque to Mr. Hall for Mrs. Hall, at the same time thanking her for what she had down in the past, and all they hoped she would do in the future.

The Rev. J. Bernard Hall, in expressing thanks, said his wife had been much touched by the desire of the Society to make the award to her, and on her behalf he thanked them. He added that the plaque was in honour of Major Dent, but he desired no mention of his name, and so it was called the Founders' Plaque.

ORCHID CLUB

AT the meeting of the Orchid Club held on February 13, fine examples of Odontoglossums, Odontiodas, Lycastes, Cymbidiums, and rare species were exhibited.

PREMIER DIPLOMAS.

Odontioda Joiceyi var. Tyntesfield.—Shown by Mrs. F. HARDY. The plant carried a magnificent spike of sixteen flowers; the individual blooms are three inches across, the segments being broadly developed and giving the flower a rounded form The petals and sepals are marked with bright crimson-red blotches on a white ground, the margins and tips being pale violet. The well-formed lip is white with a crimson-red blotch and a yellow crest.

Oncidium splendidum var. holoxanthum.—Shown by B. J. BECKTON, Esq. A chaste example of this rare variety in which the usual brown markings of the sepals and petals are bleached to a uniform light yellow-green, and the large, well-developed lip is intensely bright sulphur-yellow

DIPLOMAS OF MERIT.

Lycaste Skinneri, Cussons' var.—From A. T. CUSSONS, Esq. A large, well-formed flower with broadly developed sepals of a rose-pink colour, the petals being a darker shade with crimson spots on the lip. The plant carried a spike of seven open flowers and several buds from an immense pseudo-bulb.

Lycaste Skinneri var. Hardyana.—From Mrs. HARDY. A large flower of good form, the sepals are white, flushed with rose, the petals are dark rose, and the lip intense ruby-crimson. This fine variety has been in cultivation in the Tyntesfield collection for thirty years.

CULTURAL COMMENDATION.

Lycaste Skinneri Cussons' var.—To Mr. F. COOKSON; and to *Haemaria discolor var. Olletae.*—To Mr. W. A. STEWART

GROUPS.

B. J. BECKTON, Esq. (gr. Mr. W. A. Stewart), staged a large group of mixed Orchids, prominent among which were Cypripedium Olympus var. The Chairman and C. Florence Spencer, Trias picta, Maxillaria crocea, two fine examples of Haemaria, and a large specimen of Platyclinis glumacea with thirty flower spikes.

A. T. CUSSONS, Esq. (gr. Mr. F. Cookson), showed a large group of Cypripediums and Cymbidiums; among the latter were C. Kervalli and good examples of C. Gottianum, C. Butterfly, C. Alexanderi, and C. Lowio-grandiflorum

Mrs. F. HARDY (gr. Mr. Gilden), set up a well-arranged group of Odontoglossums and Odontiodas, among which were Oda. Redstart, Oda. Joiceyi var. Conyngham, Odm, amabile Tyntesfield var., a good white Odm. crispum, and others.

Dr. CRAVEN MOORE staged Cypripedium Gold Mohor, C. Radium, C. Noel Hardy, and others.

ROYAL GARDENERS' ORPHAN FUND.

THE Annual General Meeting of the Royal Gardeners' Orphan Fund was held at Simpson's Restaurant, Strand, on the 11th inst., the following members being present: Messrs. D. Ingamells, J. F. McLeod, C. H. Curtis, W. Howe, J. Gregory, H. J. Jones, P. R. Barr, J. Wort, R. B. Hamilton, J. M. Bridgeford, J. Cull, W. Thomson, A. C. Bartlett, G. F. Tinley and D. Swain.

The Chairman of Committee, Mr. D. Ingamells presided; the proceedings did not occupy long and the meeting passed off without much comment. After the Secretary had read the notice convening the meeting the minutes of the last annual meeting were read and confirmed. The chairman then presented the annual report of the Executive Committee, of which the following are extracts:—

EXTRACTS FROM THE REPORT OF THE EXECUTIVE COMMITTEE.

Your Committee have pleasure in presenting their Annual Report, the thirty-seventh, and in announcing that the past year has, in many respects, been a most successful one for the Fund.

It is with gratification that your Committee announce a substantial addition to the invested funds in 1924, through legacies from old and valued supporters, including £1,000 bequeathed by the late Mr. Anthony Waterer, who for very many years contributed liberally to the Fund, and whose generosity is very greatly appreciated; £100 left by the late Mr. James Harris, Swansea, and £25 bequeathed by the late Miss Rebecca Sneezum, who was a subscriber for many years. These sums will help to replace part of the Invested Funds that were, perforce, sold during the war years, but your Committee would point out that only the interest from these legacies and from the capital sums invested is available each year, so that they have to rely mainly on annual subscriptions and donations to meet the commitments of the Fund.

The total receipts from all sources during the past year, including a balance of £795 18s. 10d. from 1923, and the legacies referred to, amounted to £3,768 12s. 2d. A very considerable proportion of this sum resulted from the Annual Festival Dinner held on May 7 last at the Hotel Victoria, under the presidency of the Treasurer, Mr. Edward Sherwood. Mr. Sherwood and the members of his family, including his father, the late Mr. Nathaniel Sherwood, are counted amongst the most valued supporters of the Fund. The Committee take this opportunity to refer to the able manner in which Mr. Sherwood fills the post of Treasurer and to thank him for consenting to continue in that important office. The Fund is indebted to him not only for his eloquent appeal, at the dinner, for the Orphans, but also for interesting so very many of his friends in the work of the charity and thus bringing us new supporters. The Treasurer also headed the dinner list with the sum of £250, which is intended to be invested, the interest to furnish an allowance to a child annually to mark the occasion of his son's birth, and for this donation also the Committee extend to him their sincere thanks.

Your Committee again have to acknowledge, with great thankfulness, the assistance rendered by gardening associations during the past year.

Valuable amounts have been raised by Mr. T. H. Cook, Royal Gardens, Sandringham, Mr. F. C. Stainsby, Brocklesby Park Gardens, Lincolnshire, and Mr. W. Auton, Pyrford Court Gardens, Woking, by means of concerts and other entertainments organised by them on behalf of the Fund. Your Committee would draw the attention of other professional gardeners to this method of helping the Fund.

The death of Sir Harry James Veitch, V.M.H., is the greatest loss the Fund has sustained in recent years, as it is to horticulture generally. His kindness, liberality and sterling character are qualities that endeared him to all who knew him. He was keenly interested in our Fund, and by his death the orphans of gardeners have lost a generous benefactor and friend.

All will have learned with the deepest regret of the death of Mr. Brian Wynne, who was one of the founders of the Royal Gardeners' Orphan Fund, and Secretary since 1899. He passed away at his home at Feltham, on May 2, after a long and painful illness. Mr. Wynne was known to most of the subscribers, and his interest in the welfare of the orphans was reflected in the efficient manner in which he discharged his duties as Secretary. His loss is very deeply regretted. The secretarial duties have been undertaken by Mr. George F. Tinley during the long illness of Mr. Wynne and since his decease. Another great loss the Fund has sustained during the past year is in the death of Mr. William Bates, the oldest member of the Committee. During his long years of office, Mr. Bates did valuable work for the Fund, and he will be very greatly missed.

The balance sheet was also read to the meeting.

Mr. Ingamells, in moving the adoption of the Report and Balance Sheet, congratulated the members on the good fortune of the Fund in having received several substantial legacies during the past year. These, he said, would be invested, and help to replace the investments that were sold during the war years to meet the liabilities of the Fund. He was glad to see that the ordinary receipts were some £351 3s. 8d. better than in the preceding year.

The balance sheet showed that the total income during the year, including a balance of £795 18s. 10d. from 1923, and legacies amounting to £1,115, totalled £3,768 12s. 2d.; the proceeds of the annual festival dinner amounted to £1,073 1s. 6d., and nearly £400 was received in subscriptions and donations. Payments included the sum of £1,075 1s. 6d., children's allowances; £85 4s., printing and posting List of Subscribers; £23 9s. 5d., postages; £67 13s. 6d. rent, lighting, fires, etc. Of the balance of £443 6s. 11d., the greater amount was required to meet payments due on January 1, 1925.

The adoption of the Report and balance sheet was seconded by Mr. F. J. McLeod and carried without further comment.

The meeting then proceeded to the election of officers. Lionel de Rothschild, Esq., was re-elected President and Edward Sherwood, Esq., elected a vice-president and re-appointed Treasurer. The retiring members of Committee, Messrs. W. Auton, G. H. Barr, J. M. Bridgeford, John Cull, G. H. Cuthbert, W. Howe, and W. P. Thomson were re-elected and Messrs. W. Giles, Reading, and R. Findlay, Superintendent of Greenwich Park, elected to fill two vacancies. The retiring auditor, Mr. P. R. Barr, was re-elected and thanked for his past services. On the proposition of Mr. McLeod, seconded by Mr. Ingamells, Mr. A. C. Bartlett was elected Secretary.

The occasion for a poll not arising, the following ten candidates were elected by the meeting, namely, John Alexander Cunningham, Aileen Campbell Grieve, May Jean Campbell Grieve, Alfred Alexander Laurence, Jean Laurence, Winifred Vera Wain, Jack Wain, Alison Margaret Waite, Andrew Milby Lamont, and William Lamont. Mr. P. R. Barr asked the Committee whether the allowances to the children could not be raised to say, 7s. 6d., instead of 5s. per week. He said that all realised how very different conditions are to what they were before the war, and that 5s. now represented a very small sum. The Chairman in reply stated that the matter had been fully considered by the Committee, and they had found themselves unable to recommend an increased allowance, but the question was always before the minds of the Executive and when it was practicable no doubt would be adopted.

A vote of thanks to the Chairman concluded the proceedings. Mr. McLeod in proposing the vote of thanks referred to the valuable work Mr. Ingamells had done for the Royal Gardeners' Orphan Fund and to his kind nature and excellent qualities as a chairman. Mr. G. F. Tinley, who seconded, said that Mr. Ingamells was one of the hardest workers for the Fund, and the new Secretary would find him ever ready to help on such occasions as the Annual Festival Dinner, also that he was one of the most lovable of men to work with, and did not spare himself in anything he could do for the welfare of the orphans, in whom he took the very deepest interest.

ROYAL SCOTTISH ARBORICULTURAL.

THE annual business meeting of this Society was held in the Lecture Hall of the Forestry Department of the University, George Square, Edinburgh, on February 6, the Earl of Moray, president, in the chair.

The report by the Council showed that the membership was 1,695, an increase of thirteen on the previous year. It was also intimated that the Society's collection of timbers exhibited at Wembley, and those housed at Saughton Park, Edinburgh, had been offered to and accepted by the University authorities for incorporation in the museum at George Square, where they would be available to any one who wished to examine them. Extensive damage by squirrels in the north of Scotland and the increased attention which all the political parties were now giving to forestry were also referred to. The funds of the Society, it was stated, stood at, approximately, £2,500.

The following office-bearers were elected in place of those who retired by rotation:—President Sir John R. Gladstone, Bart., of Fasque; vice-president, Sir James Campbell, LL.D., D.L., Edinburgh; councillors, Messrs. R. Allan, J.P., F.S.I., Polkemmet; J. Edwards, Culhorn; A. Findlayson, Newbattle; F. Sime, Inverness; and Captain Wm. Stewart, of Shambellie. Sir John Stirling Maxwell, Bart., was re-elected hon. secretary, and the secretary and treasurer, auditor, hon. editor of Transactions, and the other honorary officials were also re-elected. Dr. Mark L. Anderson, of the Forestry Commission, afterwards delivered an address on "The Importance of a Knowledge of Glacial Geology to Scottish Foresters."

ROYAL CALEDONIAN HORTICULTURAL.

THE first ordinary monthly meeting of this society for the current session was held at 5, St. Andrew Square, Edinburgh, on February 3, when the president, Mr. Robert Fife, delivered an address on ' Evolution in Horticulture." The three flowers which he specially dealt with were Roses, Dahlias, and Pansies.

The exhibits were:—Primula malacoides, from Mr. D. Macdonald, Trinity Cottage, Edinburgh; Primula malacoides alba, from Mr. D. Armstrong, The Drum, Liberton; Arctostaphylos Manzanita, from the Royal Botanic Garden, Edinburgh.

It was intimated that the prize list for the international show to be held in September would be issued this month.

NEW INVENTIONS.

DEVICE FOR SECURING FRUIT TREES TO WIRES.

WE have received from Mr. Ernest Dyball, Morley House, 26, Holborn Viaduct, E.C. 1, a device (Fig. 54) for training and holding in position growths of fruit trees, Roses, or any plant which is trained against wire or wire netting. The invention, which is known as the "Handy Patent Plant Holder," is made of wire, and the holders may be readily attached to the strand of wire or wire netting and so do away with the tiresome operation of tying-in the growths with raffia or other materials. It appears to be an excellent labour-saving device, and should it prove that the stems are in no way injured and are held sufficiently firm so as to prevent them chafing against the wire—a point which we are unable to pass any opinion upon until a practical test has been undertaken—the Handy Patent Plant Holder will doubtless be of considerable service, especially to those who for lack of time and want of experience find the important operation of nailing somewhat tiresome.

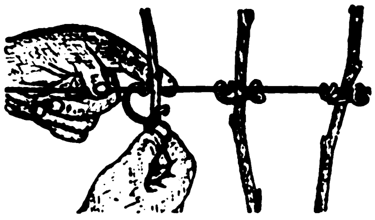

FIG. 54.—SHOWING THE USE OF THE "HANDY PATENT PLANT HOLDER."

LAW NOTES.

A SCOTCH NEWSPAPER VENTURE.

THE story of the start and sudden collapse of *The Scottish Gardener and Northern Fruit Grower* was told in Dumbarton Sheriff Court on Tuesday, when John L. Carvel, Main Street, Alexandria, was examined in summary bankruptcy. He stated that he had been in the employment of Messrs. Benn Bros., London, for two years, and when he entered upon the newspaper venture he had a capital of £500, of which sum £300 was his wife's money. He attributed his insolvency to insufficient capital and explained that he had neither house nor furniture. When he got into difficulties he communicated with Lord Forteviot, who offered to put a sum of money into the concern on condition that a stipulated amount was raised by the bankrupt, but the effort failed. Questioned regarding certain advertisements which appeared, he admitted that a number were admitted free with the object of attracting other business. In the statement of affairs supplied to the Trustee, liabilities were estimated at £411 and assets at £365, but as the latter represented monies due to the paper which he had collected and given to his father, the examination was continued to enable the bankrupt to hand over the cash to the Trustee, together with books in his possession.

SCHEDULES RECEIVED.

ABBEY PARK FLOWER SHOW.—Thirty-sixth exhibition to be held on Tuesday and Wednesday, August 4 and 5, 1925, at Leicester.—Secretary, Mr. J. Staynes, Town Hall, Leicester.

WESTERN COMMERCIAL HORTICULTURAL SPRING SHOW.—Exhibition to be held at St. John's Hall, Penzance, on March 6 and 7.—Secretary, Mr. H. W. Abbiss, County Hall, Truro.

ANSWERS TO CORRESPONDENTS.

AZALEAS FAILING: *Sugarloaf.* The trouble is not caused by organic disease; no fungus was present on the specimen you sent. From your letter we assume that the trouble is due to sodden conditions at the roots, caused by ineffective drainage of the pots and over-watering. You must also take care when the plants are stood out-of-doors that they are not subjected to a check at the roots through inattention in watering.

DAISIES ON A LAWN: *H. C. B.* The only certain method of destroying Daisies on lawns is by removing them with a Daisy fork or some other implement. The lawn should be marked out into areas of equal portions and each weeded completely of the Daisies before proceeding to do the next. Nitrogenous fertilisers, including lawn sand, have the effect of making grass grow very strongly, to the suppression of the Daisies and other weeds, but the most thorough plan of exterminating the Daisies is by weeding.

GREEN GROWTH ON VERANDA STEPS: *Constant Reader.* Try the effect of scrubbing the steps with a strong solution of caustic potash or, by means of a mop, use an acid of a strong nature. Diluted hydrochloride acid (spirits of salts) may be efficacious, but in both cases you should wear an old pair of gloves, and take care that none of the liquid reaches the clothes.

GROWING WATERCRESS UNDER GLASS: *R. Wilson.* A Watercress bed may be established in a garden either by sowing seeds or planting rooted cuttings. Of the two methods, that by seeds is the better, because it provides clean plants. A shady position on the north side of a wall of moderate height is the best, so that the plants may obtain good light without the full glare of the sun. Frequent watering will be necessary in dry weather. Seeds may be sown in spring or later. A June or July sowing would give healthy young plants for winter use. Sow the seeds in lines twelve inches apart, and thin them to six inches in the lines to allow a sturdy growth and branching habit. About the middle of September some pans could be drained and filled with sandy soil, with plenty of leaf-mould or even a little well-rotted manure added. The pans should then be filled with the Watercress plants and placed in cold frames. The latter should be kept closed for two or three days until the plants pick up, after which plenty of air should be given, or the lights could be drawn right off in mild, dry weather. A little before the Cress is wanted, place a number of pans, sufficient to give the requisite supply in a warm house; this will induce a rapid growth of clean leaves. A mild heat is sufficient to enable the Cress to grow. If the plants are not cut too low, and the heat is not too great, it may be possible to obtain a second crop from these prepared pans. All the same, it is easy to fall back upon the beds and fill fresh pans with plants from the outside. If some beds are planted of a suitable size to be covered by cold frames, they could be covered in January to furnish a supply in spring, when the weather is getting warmer.

LEAF-MINING MAGGOT: *T. C.* You should spray the plants with some distasteful fluid to prevent the mother from laying her eggs on the plants. Quassia extract, Hellebore powder, or similar insecticides would be efficacious. After the eggs are laid and the maggots hatched spraying is useless, as the grubs are protected under the epidermis of the leaf.

LONICERA NITIDA AS A HEDGE PLANT: *Lonicera.* Lonicera nitida makes a capital hedge plant, as it is ever-green and of good appearance. It will be necessary to use one or two wires to support the stems until the hedge is complete and the branches are rigid enough to hold themselves upright. After that period all that is necessary is an occasional trimming.

MOSS ON A LAWN: *E. R. W. M.* and *J. T. S.* It would appear that the tennis lawn is lacking in one or more of the necessary constituents of plant food to make the grass grow. Moss is often due to a wet or sour soil, but the species you send comes up in great quantity on clay soils after a Heath fire where no moss was present before; it also grows on dry heaths where the soil is poor and deficient in vegetable matter, and most likely in nitrogen. This latter is often scanty in clay soils after a period of rain. At present we advise a dressing of loam, leaf-mould and lime, the latter newly slacked. Old potting soil would answer the purpose if sifted, as the loam and leaf-mould should be. This material will enrich the soil and help the grass to develop. A gallon of lime may be used to a barrow-load of soil. In March two parts each of superphosphate of lime and kainit and one part of sulphate of ammonia could be mixed and applied at the rate of three ounces to the square yard. This could be repeated a month later. If there are any bare patches on the lawn by the beginning of April you could scratch them with an iron rake, sow seeds, and cover them lightly with sifted soil.

NAMES OF FRUIT: *H. S.* One variety of Apple was decayed when received; the other is Grange's Pearmain. *J. R. McG.* 1, Lord Lennox; 2, Northern Greening.

NAMES OF PLANTS: *H. W.* Billbergia nutans. *M. T.* Adonis annua.

WEED ON A SHINGLE DRIVE: *C. H. C.* The weed arrived in very bad condition. Both it and the Potato in which it was packed were putrid and offensive. The weed itself was black and opaque, so could not be examined microscopically; but, judging by some short strands of it which could be isolated, it seemed to be a species of Vaucheria, which is an Alga and not a flowering plant. If it was of a dull, dark green colour, thready and growing in masses, without any sign of flowers, it was either Vaucheria or some of its allies. Material of this kind would carry best over long distances in a bottle of methylated spirit. Vaucheria can live on damp ground, in fresh or salt water, according to the species. Salt and weed-killer would destroy the weed if the former could be brought into contact with it in dry weather. Finely powdered sulphate of ammonia would answer the same purpose in dry weather. Sulphate of iron at the rate of one pound to a gallon of water would be a good remedy, because it would penetrate beneath the stones of the shingle. Here again dry weather is desirable to avoid the dilution of the weed-killer; and although this is not reputed as a dangerous poison, it is well to apply it on the morning of a dry day so that the shingle would get dry by night. The proper way to prepare this is to put the iron sulphate into a barrel or other wooden vessel (not metal) and pour the sulphuric acid over it. Then pour in the water gradually. Never pour sulphuric acid into water or you may have an explosion or sudden boiling up. The proportions are fifty gallons of water, one pint of sulphuric acid, and twenty-five pounds of iron sulphate; or use half the quantity of each material for smaller are as of the drive.

Communications Received.—A. O.—K. M. H.—C. R.—R. G.—C. E. S.—Rut.—F. I.—R. W.—J. A. P.—A. G.—J. K.—T. B.—J. C.—J. G. W.—W. J. E.

MARKETS.

COVENT GARDEN, Tuesday, February 17, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Azaleas, per doz.	15 0–36 0
Cacti, per tray, —12's, 15's	5 0– 7 0
Crotons, per doz.	30 0–45 0
Cyclamen—	
—32's	36 0–48 0
—48's	24 0–30 0

	s. d. s. d.
Cyrtomium	10 0–15 0
Erica melanthera, 48's per doz.	21 0–30 0
— —60's, per doz.	8 0–10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0– 4 0
Marguerites, white, 48's, per doz.	18 0–30 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 6

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun.	12 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays	1 6– 2 6
short „	0 9– 1 3
—Sprengeri, per bun.	
long sprays	1 6– 2 0
medium „	1 0– 1 6
short „	0 4– 1 0
Bouvardia, white, per doz. bun	12 0–15 0
Camellias, White, per box	3 6– 4 0
Carnations, per doz. blooms	3 0– 5 0
Croton leaves, var., doz. leaves	0 9– 2 6
Daffodils—	
—Emperor, per doz. bun.	12 0–18 0
—Golden Spur, per doz. bun.	5 0– 6 0
—Henry Irving, per doz. bun.	5 0– 6 0
—King Alfred, per doz. bun.	21 0 24 0
—obvallaris, per doz. bun.	3 0– 5 0
—Sir Watkin, per doz. bun.	10 0– 15 0
Fern, French, per doz. bun.	0 9– 1 3
Freesia, per doz. bun.	4 0–18 0
—White, per doz. bun.	2 6– 3 0
—Special, long, per doz. bun.	9 0–12 0
French Flowers—	
Carnations, per bun	1 6– 2 0
Marigolds, per pad	7 0–10 0
Mimosa, per pad	8 0–12 0
—per bun.	1 0– 1 3
Narcissus—	
—Grand Primo, per doz. bun.	5 0– 8 0
—ornatus, per doz. bun.	7 0–10 0
—Paper White, per pad	30 0–40 0
—Soliel d'Or, per doz. bun.	4 0– 6 0
Ranunculus, double scarlet, doz bun.	8 0–10 0
—Carmine, per doz. bun	8 0–12 0

	s. d. s. d.
Roses, Safrano per bun. of two doz. blooms	2 6– 3 6
—per pad	8 0–10 0
—Ulrich Brunner, per doz. blooms	6 0–10 0
Violets, Parma, per bun.	5 0– 6 0
—single, per pad	8 0–12 0
Galax, American, green and bronze, per doz. bun.	— 3 0
Iris tingitana, per doz. spikes	5 0– 6 0
Lilac, Dutch, per spikes	4 0– 8 0
Lilium lancifolium album, per doz. blooms	— —
—rubrum, long, per doz. blooms	4 0– 5 0
—short „ „	3 0– 4 0
Lilium longiflorum long, per doz.	11 0–12 0
short „ „	10 0–12 0
Lily of the Valley, per doz. bun.	24 0–36 0
Narcissus—	
—Scilly White, per doz. bun.	4 0– 6 0
Orchids, per doz.	
—Cattleyas	24 0–30 0
—Cypripediums	5 0– 7 0
Primroses, per doz. bun.	2 6– 4 0
Prunus triloba (Dutch), per bun.	1 0– 1 6
Richardias (Arums) per doz.	9 0–12 0
Roses, new crop, per doz. blooms, Richmond	10 0–18 0
Ruscus, French, per bun.	1 0– 2 0
Smilax, per doz. trails	2 0– 3 0
Snowdrops, doz. bun.	2 0– 3 0
Sweet Peas, per doz. bun.	15 0–18 0
Tulips, per bunch—	
—Couronne d'Or	2 0– 2 6
—La Reine	1 6– 2 0
—Mon Tresor	2 0– 2 6
—Prince of Austria	2 0– 2 6
—Rosina	2 0– 2 6
—Thomas Moore	1 9– 2 0
—Wm. Copland	3 0– 4 0
Violets, per doz. bun	2 0– 8 0

Remarks:—Supplies of flowers are generally more plentiful both from home growers and the Channel Islands. Daffodils and Narcissi are arriving in good condition from the latter source. Other imported subjects include Freesia, Anemones, Irises, Violets, and Smilax. Daffodils and Narcissus ornatus from home growers are more plentiful and excellent in quality. Tulips are also much improved in quality, and a good selection is on offer, both single and double varieties. Best quality blooms maintain their price. The most prominent sorts are Couronne d'Or, Prince of Austria, Cramoise Brilliant, Yellow Prince, Thomas Moore Gris de Lin, La Reine, and Murillo. A few Darwin Tulips are also on sale, such as William Copland, Farncombe Sander, and Pride of Haarlem. Of Roses Richmond is the only variety from home growers, but more sorts are expected in a few days. A few Sweet Peas are the newest arrival, but the spikes are only medium in quality. English single Violets are in excellent condition, but there is little demand for them. Snowdrop and Primroses are also increasing in quantity, as well as a few mixed Anemones. White and mauve Lilac is arriving in good condition from Holland. The consignments of French flowers appear to be sufficient for present requirements. White Stock and Star of Bethlehem (Allium) is taking the place of Paper White Narcissus, which is practically finished. Mimosa, Anemones, and Ranunculuses are reaching the market in good condition, and their prices are easier.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Oregon Newtown	14 0–17 0
—Newton Wonder	6 0–10 0
—Bramley's Seedling—	8 0–16 0
—British Columbian Newtown	13 0–17 0
—Spitz	13 0–15 0
—Winesap	12 0–14 0
—Nova Scotia—	
—Stark	26 0–30 0
—Russett	25 0–35 0
—Baldwin	23 0–30 0
—Greening	24 0–35 0
Bananas, singles	17 0–25 0
—doubles	17 0–27 6
Grapes—	
—Gros Colmar	3 0– 5 0
—Belgian Colmar, per lb.	2 6– 3 0
—Almeria, per barrel	30 0–35 0
Grape Fruit, Cuban	23 0–25 0
—Jamacia	— 25 0
—Florida	— 27 6

	s. d. s. d.
Lemons, Messina, per box	8 0–10 0
—Murcia	12 0–14 0
Oranges, Jaffa	14 0–16 0
—Spanish—	
—300's	15 0–30 0
—360's	16 0–20 0
—504's	16 0–20 0
—Californian Seedless	— 26 0
—Messina Bitters	— 14 0
—Seville Sour	18 0–22 0
—Malaga Sour	18 0–22 0
Pears—	
—Williams's Bon Chrétien	1 6– 6 0
—Clapp's Favourite	4 0– 5 0
Pines	1 6– 4 6
South African Peaches	6 0–12 0
—Chalcots	6 0– 8 0
—Nectarines	7 0–10 0
—Plums	
—Santa Rosa	5 0– 6 0
—Wickson	6 0– 8 0
Tunis Dates, doz.	3 6– 5 6

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	3 0– 5 0
—Worthing	4 0– 6 0
—Madeira, per box	2 6– 6 0
Beets, per cwt.	4 6– 5 0
Cabbage, per tally	6 0– 8 0
Canary Island Tomatos	14 0–20 0
Cauliflowers, per doz	2 0– 3 0
Forced Mint, per doz.	4 0–10 0
Celery, best, washed, per bundle	2 0– 3 0
—Second	0 9– 1 0
Chicory, per lb.	0 3½–0 4
Carrots, per cwt.	3 6– 5 0
Cucumbers, per doz.	12 0–24 0
Dutch Onions	10 0–11 0
Endive, per doz	2 0– 3 0
Batavia, per doz.	3 0– 3 6
English Asparagus—	
—Finest	7 0– 8 0
—Best	4 0– 5 0
French Asparagus—	
—Paris Green	7 6– 8 0
—Laurls	8 0–10 0

	s. d. s. d.
Greens, per bag	1 0– 2 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundles	2 6– 3 6
Lettuce, per dozen	1 6– 2 0
—Outdoor	2 6– 3 0
Mushrooms, cups	2 0– 3 0
—broilers	1 3– 1 9
Onions, Valencia, per case	14 0–16 0
Parsnips, per cwt.	4 0– 6 0
Potatos, Canary Island, per case	10 0–14 0
—Spring crop	15 0–18 0
Potatos, per ton—	
—Dunbar	220 0–240 0
—King Edward	210 0–230 0
—White	90 0–200 0
—New Guernsey lb.	1 0–0 10
Rhubarb, Forced, per doz.	2 3– 2 6
Savoys, per tally	7 6–12 6
Seakale, per punnet	1 9– 2 0
Spinach, per bushel	3 0– 4 0
Sprouts, bag	3 6– 5 0
Sweet Potatos	3 0– 4 0
Turnips, per cwt.	4 0– 5 6

Remarks.—General conditions are brighter than for some time past. Cape fruits have been a feature, the shipment consisting mainly of Peaches, Nectarines, Plums, and Pears, and they have sold very well. The Apple trade has been on the quiet side, the demand being for high-grade fruits only; second-grade Apples, either home-grown or imported, are not wanted. Some fine Bramley's Seedling Apples have been marketed, mainly from growers who have cool chambers. A brisk inquiry for best Oranges is ruling, no doubt the prevalence of influenza being the main cause of the demand. Forced Beans are more plentiful and the high prices lately ruling have received a set back. Forced Asparagus keeps its price level very well, in spite of the competition of foreign Asparagus. Guernsey new Potatos are none too plentiful, supplies being just sufficient for the demand at the present prices. New Potatos from the Canary Islands, Algeria, and Azores are a quiet trade. Tomatos from the Canaries are selling fairly freely. Forced Rhubarb is in firm demand, all coloured stalks selling freely. Mushrooms are keeping a steady level both in supply and demand. Plenty of good old Potatos are still on offer and meeting a fair market.

GLASGOW.

The volume of business transacted in the past week showed a moderate expansion and the tone was firmer, with a small advance in prices towards the close. In the fruit section Apples advanced 6d. per case, and good quality Oranges were also dearer, Jaffas averaging 16/–, Sunkist, 18/– to 20/–; Blood 300, 16/–, and Valencia 240, 20/–. Grape Fruit ranged from 23/6 to 25/–; Mercia Lemons 300, 12/6 to 15/–, and Cape Pears, 6/6 to 7/– per box. Gros Colmar Grapes improved, English grown bunches realising from 3/9 to 5/– per lb., and Scotch, 3/6 to 4/–

The feature of the vegetable market was the recovery in prices of Onions from the low levels recorded in the previous week. Cases of 5's made 16/6, 6's 15/6, and 4's 14/–; while Dutch sold at 11/6 per bag. French Beans were round about 6/– per box; Lettuce, 1/3 to 2/– per doz.; Seakale 1/6 to 2/6 per bunch, and Watercress, 1/– per doz.

Supplies of cut flowers were plentiful and varied, whilst the quality was generally of a high standard. Prices of Tulips worked out the following averages, and the higher figure represents the closing quotations:—Copland, 9d. to 1/3 for 6's; Bartagon, 1/– to 1/6; Tea Rose, 9d. to 1/1; Austria, 8d. to 1/–; Ibis, Couronne d'Or, Rose Tendre, 1/– to 1/3; Murillo, 9d. to 1/–, and Lenôtre, 1/6 to 1/9. Prices for Daffodils remained steady. Golden Spur at 1/–; King Alfred, 1/6 to 2/– 12's; Pheasant's Eye, 8d. to 10d. per doz. bunches; William Irving, 6/–; ornatus small, 8d. to 10d. per bunch, large, 10d. to 1/–; Pearl White and Penzance Daffodils, 4/– to 6/–. Hyacinths brought from 8d. to 1/–; Violets, 1/–; Mimosa, 5/– to 6/– per case; French Star of Bethlehem, 16/– to 20/– per case; Snowdrops, 1/– to 2/– per doz. bunches; Dutch Prunus, 2/– to 3/– per bunch; Anemone, 8d. to 1/–; Lilac white, 6/– and 7/–, purple 5/6. Lily-of-the-Valley brought 7/– and 8/– per doz. for English, and 4/- to 5/– for the Guernsey product; 10/– to 12/– per bunch for Lilium Harrisii, and 6/– to 8/– per doz. for Arums. Carnations fluctuated considerably, moderate-sized blooms realising up to 2/6 and best from 3/– to 4/– per doz. Wallflower sold at 2d. to 4d. per bunch; bowls of Hyacinths, 1/9 to 2/– each.

Pot plants are arriving in greater numbers. "Sailors" sold at 8/– per doz., Araucaria 10/–, and Bays in tubs at 10/– each.

THE WEATHER.

January was a very mild but dull month, northerly and north-easterly winds being almost absent. Except on a few days at the beginning and end, which were notably stormy and rather wet, the weather was generally dry and quiet, air pressure being unusually high. More than 400 hours of wind from East to South produced much haze as well as cloud, and one hour or more of bright sunshine was only experienced on seven days. The mornings were more sunny than the afternoons, owing to the time taken for the daily smoke-cloud from East Lancashire to reach Southport. (In spring and summer the coastal diurnal sea-breezes produce an opposite effect, and the afternoons and evenings are much more sunny than the mornings). The mean temperature of the month was 42¼°, or 3¼° above the average for 50 years. There were only 30 hours of sunshine, or 13 fewer than the normal number. Rain fell on 14 days, or three less than usual, and the total quantity was 2·20 inches, or nearly half-an-inch below the average. Gales occurred on six days, and gusts at rates of from 75 to 80 miles per hour were recorded at Marshside in the course of the 1st, 2nd, and 4th. Hail fell also on six days. Ground-frost was limited to seven nights. Thick fog only occurred once; snow and thunder were absent. *Joseph Baxendell, F.R. Met.Soc., Borough Meteorologist, Southport.*

The Weather in Scotland.

January was dull, cloudy and comparatively mild. The mean maximum temperature was 44.3° and the mean minimum 36°. This gives a mean temperature of 40.2°, which is 3° above normal. The highest screen temperature of 51° was reached on the 17th, and the lowest, of 31°, on the 4th and 5th, an absolute range of 20°. The lowest maximum of 38° occurred on the 22nd, and highest minimum, 43°, on the 11th and 14th. The lowest grass reading occurred on the 5th and 6th, viz., 27°, and there were 12 days of ground frost. During the month, the soil temperature, with some fluctuations, fell 2°, from 40° at the beginning to 38° at the close. Owing to cloud frequency, the amount of bright sunshine recorded was small, being only 40.2 hours, a daily average of 1.3 hour and a percentage of 17. The two brightest days were the 5th and 15th, with 5.8 and 5.7 hours respectively. There were 12 absolutely sunless days. Rainfall totalled 1.89 inch. The wettest day was the 2nd, which yielded .68 of an inch. There were 10 official rain days, 7 days of precipitation, with less than .04 of an inch, and 14 rainless days (rainfall was under normal). The mean barometric pressure was fairly high, viz., 1015.7 millibars (29.994 inches). The lowest reading of 28.827 inches was noted on the 2nd, while the highest (30.750) was on the 19th. Snow was lying on the 1st, with an additional fall on the 2nd, which all disappeared during the day. Wind assumed gale force on two occasions, that of 13th and 14th being the greatest. Lunar halos and coronas were observed on several nights, and the solar eclipse on the afternoon of the 24th, was excellently visible from the first contact until sunset. *John Davidson, Director of Studies, Meteorological Station, St. Andrew's Provincial Committee for the Training College Gardens, Mayfield, Dundee.*

GARDENING APPOINTMENTS.

Mr. Alfred Cavanagh, previously Steward and Gardener to Sir Arthur P. Vivian, and at the Royal Gardens, Kew, as Gardener to Col. Beddington, at Villa Yolandot, Ospedaletti, Ligure, Italy.

Mr. Henry Duke, previously Gardener at The Lodge, Felixtowe, Suffolk, as Gardener to R. O. Hambro, Esq., Kidbrooke Park, Forest Row, Sussex

CATALOGUES RECEIVED.

Dickson and Robinson, Cathedral Street, Manchester.—Farm seeds.

D. Townsend Broadmead, Sway, near Lymington.—Trees and shrubs.

Maxwell and Beale, Dorset Nursery, Broadstone Dorset.—Alpine and rock plants, etc.

Foreign.

Peter Henderson and Co., 35, Cortlandt Street, New York.—Seeds.

Glen Road Iris Gardens, Wellesley Farms, Mass., U.S.A.—Irises

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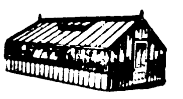

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THE
Gardeners' Chronicle

No. 1992—*SATURDAY, FEBRUARY* 28, 1925.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich 40·8°

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, February 25, 10 a.m.. Bar. 29·4, temp. 43°. Weather, Sunny.

Hybrids between Radish and Cabbage.

The fact that hybrids are possible between the Radish and Cabbage when the former is used as the female parent has been demonstrated experimentally by numerous investigators. Although from a practical point of view the resulting hybrids, which are sterile with one another and with either parent, are useless, from the point of view of the science of heredity they are of interest. The most recent work* on the subject shows that the hybrids present remarkable differences among themselves. Some are of stunted growth, with stems covered with small leaves down to the base; others form large, leafy rosettes more than a yard-and-a-half across, or even grow into bushes with short, thick branches and large leaves. If the male parent be a Brussels Sprout the stunted form predominates; if it be a hearting Cabbage, the rosette or bush form of hybrid occurs in larger numbers. Though the hybrids flower they set no seed either when self-fertilized or crossed back with a parent. The root system of the hybrids is intermediate between that of the Radish and the Cabbage parent. They have one large tap root like the Radish and many lateral roots like the Cabbage. The only good thing to be said in their favour is that the roots have a less pungent flavour than those of the Radish. The "roots" of the hybrids are curious also in that they bear numerous outgrowths which may give rise to leafy shoots. Anyone, presumably, might propagate the curiosity vegetatively and so keep it alive, perhaps, indefinitely. One of the most interesting problems presented by the hybrids is the meaning of the fact that those of the puny type are, save for their branching roots, like poorly-grown Radishes. This fact suggests that in them the Cabbage chromosomes have been cast out of the cells. Such a casting out of chromosomes has been described in the case of a hybrid between species of two different genera of sea urchin. In the cells of the Radish and Cabbage hybrids, however, the complement of chromosomes, eighteen, nine from each parent, is complete, and therefore the casting-out hypothesis will not do. The infertility of the hybrids appears to be associated with the fact that, in cell division leading to pollen formation, the parental chromosomes of a cell do not pair with one another as they do in normal divisions, but remain apart; as a result, no completely fertile pollen grains are formed. This failure of chromosomes to pair in the process of cell division, preliminary to pollen formation, occurs also in other hybrids, as, for example, those between Digitalis purpurea and D. lutea. Horticulturists who are daily confronted with the remarkably and seemingly capricious behaviour of plants with respect to capacity for hybridisation must naturally take an interest in all these attempts to seek out the procedure of the cells themselves. Although it is a long and arduous quest, there is hope that it will lead eventually to the discovery of the meaning of many, if not all, of those strange phenomena of sterility, hybrid vigour, and the like, of which those of us who make crosses and raise hybrids see so many and such striking examples.

Huntingdon Daffodil Show.—Miss P. Linton, Hon. Secretary of the Huntingdon Daffodil Show, informs us that the date of this show has been altered from April 16 to April 17 as the Royal Horticultural Society's Show falls on April 15 and 16.

The Late Sir Frank Crisp's Collection of Microscopes.—On Tuesday, the 17th inst., Messrs. Stevens disposed of the more valuable portion of the collection of microscopes collected by the late Sir Frank Crisp, Bart., of Friar Park, Henley. The collection in its entirety comprised some three thousand microscopes and over one thousand pieces of apparatus. The more modern microscopes were sold by Messrs. Stevens during the years 1920 and 1921, and these disposed of on the 17th inst. comprised the earlier and rarer specimens, totalling 371 lots. The total sum realised at the sale was £1,800, the most valuable instrument being one of elaborate construction made by G. Adams, in Fleet Street, London, and contained in a shaped Chippendale case, for which £360 was bid. Another microscope, an original modification of the Hooke microscope, dating from about the year 1675, fetched £160. The lots included simple microscopes and small pocket compound microscopes; compound microscopes dating from the seventeenth century to the introduction of achromatism in the early part of the nineteenth century, optical cabinets, solar and projection microscopes. The late Sir Frank Crisp was universally recognised as a leading authority on microscopes and all important finds were brought under his notice, so that he was able to obtain many rare and interesting forms that it would now be impossible to duplicate.

Garden City Settlements in Scotland.—Presiding at the annual meeting of the Scottish Veterans' Garden City Association at Edinburgh on Friday, Lord Salveson remarked on the progressive success which had been accomplished, and stated they had been able to complete no fewer than seventeen settlements throughout Scotland. By the end of 1924 every one of these settlements, embracing 149 houses, was occupied by a disabled man and his wife. Nearly £200,000 had been spent on the scheme, and he estimated that there was now a population of 1,000 persons housed at the expense of the Association. The need, of course, had only been met to a very small extent, and the erection of additional houses was contemplated.

Plants for Chalk Soils.—Many gardeners understand something of the limitations imposed upon their endeavours by certain soils. But even so they are frequently expected to cultivate plants desired by their employers or presented by friends, without any previous knowledge of the likes or dislikes of these subjects. In such cases much time and irritation would be saved if both employer and gardener had ready access to lists of plants suitable for different kinds of soils. One such list is now available in the recent issue of the *Kew Bulletin*, No. 1, 1925. This deals with plants known to succeed in chalk soils, and is contributed by Major F. C. Stern, who has created a charming garden at Highdown, Goring-on-Sea. This garden is at an elevation of 250 feet and faces the sea: the soil is chalk with a thin overlay of loam which varies in depth, but rarely exceeds one foot. It will be obvious that plants which thrive under these conditions are unquestionably chalk lovers, and that no mistake can be made in planting them on chalk soils. Major Stern's list consists of about five hundred species and varieties, and includes Arundinaria, Berberis in variety, Buddleia, Ceanothus, Cistus, Clematis, Cupressus, Cryptomeria, Cytisus, Daphne, Cotoneaster, Escallonia, Erica, Fuchsia, Genista, Helianthemum, Ilex, Juniperus, Lapageria, Lonicera, Magnolia, Myrtus, Olearia, Pinus, Pyrus, Rhus, Rosa, Rubus, Senecio, Spiraea, Syringa, Veronica, Viburnum, Viola, Vitis, Wistaria, and Yucca. Seventeen Lilies and twenty-two Irises are also listed, but no alpine or herbaceous plants are quoted, as, with comparatively few exceptions, these are quite at home on limestone. Major Stern observes that "Rhododendron rubiginosum is included in the list as it has grown and flowered on this soil for over three years without showing any sign of injury from the lime. Chinese Rhododendrons, such a R. oreotrephes, R. Traillianum, and others from the Likiang Range, are being tried, but it is not possible to tell yet whether they are truly chalk plants or not. It will be noticed that the flora is composed mostly of plants from China and New Zealand and some hardy plants from South America and the Mediterranean region."

Glasgow and West of Scotland Horticultural Society's Show.—Lady Maud Carnegie has consented to formally open the annual flower show which is to be held in the Kelvin Hall on September 1. Last year, it may be recalled, she performed the opening ceremony at Aberdeen Centenary show and later at Dundee Show.

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* Hybrids of Raphanus sativus × Brassica oleracea. By G. D. Karpechenko. *Journal of Genetics*, 14, 3. December, 1924.

Leeds Rhubarb Competition.—The twelfth annual Rhubarb show of the Leeds and District Market Gardeners' Association was held at the Griffin Hotel, Leeds, on Saturday, the 21st inst. There were eight classes and the competition generally was very good. The highest number of entries was in the class for three marketable bunches of Victoria Rhubarb, not to exceed three quarters of a pound each, for which the first prize was a Silver Cup valued at fifteen guineas, given by Messrs T. J. Poupart, Ltd., Covent Garden. This was won by Messrs. T. W. and H. Popplewell, Farsley, who also showed the best six sticks of Dawe's Champion, thus winning the Gold Medal offered by Mr. Smart of Covent Garden. Other prize winners were Mr. A. Gaythorpe, Bramley, for six sticks of Prince Albert or Linnæus; Messrs. Whitwell and Briggs, Bramley, for six sticks of Victoria or any other variety over five pounds in weight; Mr. E. Stokes, Churwell, for six sticks of Victoria or any other variety not less than three and a half lbs. and not exceeding five lbs. in weight; Mr. T. D. Watson, Morley, for the best three marketable bunches of Dawe's Champion Rhubarb, not to exceed three quarters of a pound each, and this gentleman also won the first prize for the best three marketable bunches of Prince Albert or Linnæus, not to exceed three quarters of a pound each, and for the best shed of growing Rhubarb. The usual dinner and smoking concert was held during the evening, when the prizes were distributed by the President, Mr. Geo. Riley.

Horticultural Congress in Paris.—The Thirty-second Congress organised by the French National Horticultural Society will be held in Paris, in the large hall of the Society at 84, Rue de Grenelle, on Saturday, the 30th May, at 9.30. Papers will be read and discussed on a number of interesting subjects.

Gardens in Devastated Regions of France.—At a lecture on "The Return of the Garden to Devastated France" given at the Sesame Club, Miss Helen Colt, Founder of the Garden League for Devastated France, said that they were as anxious to carry through their work as they had been at its inception in 1920, at a moment when all was in ruins. The reason for this desire lay in the immeasurable benefit which undoubtedly results to the entente between England and France through the League's work. Material gifts of tools, seeds and fruit trees from English people and children, whether to the societies of horticulture of Rheims and Verdun, or to the vast work of helping the restoration of gardens attached to elementary schools, had been infinitely appreciated by the French peasants and children. The firm of Richard Melhuish has collected and forwarded a combined gift of garden tools from themselves and other firms, to the League. Among donors of seeds and bulbs to the League are the firms of Messrs. Sutton and Sons and Messrs. James Carter and Co. Mr. Peter Veitch and Mr. H. G. F. MacDonald of Harpenden, who themselves give most generously, are members of the League's Executive Committee in London. The British Committee of the Garden League has, by the hospitality of The Mary Ward Settlement, its office at 36, Tavistock Place, W.C.1, where gifts in money and kind will be gratefully accepted.

Prohibition of Importation of Potatos from Canada.—It will be remembered that in December last the Ministry of Agriculture felt it necessary to prohibit the importation into England and Wales of Potatos grown in the United States, in order to guard against the importation into this country of the destructive Colorado Beetle with which the Potato fields over large areas of the States are infested. It was recognised at the time that consideration would have to be given to the necessity for similar action in regard to Potatos grown in Canada, and enquiries have accordingly been made as to the prevalence of the Colorado Beetle in the Potato-growing districts of the Dominion. It appears, as a result of these enquiries, that the continued importation of Canadian Potatos involves a risk of the introduction of the beetle into this country, and the Ministry has accordingly issued The Colorado Beetle Order of 1925, prohibiting the importation into England and Wales of Potatos grown in Canada. The Order comes into operation immediately, but provision is made for the admission of any consignments that may already have been shipped.

Proposed New Park for Aberdeen.—The city of Aberdeen proceeds apace in the acquirement of land for public purposes. The latest suggestion is the purchase of the estate of Hilton, situated on the north and within the environs of the city, the area embracing some two hundred acres. Included in the estate are the old mansion house, policies and grounds, and a large breadth of arable land. The last will be utilised for feuing purposes, and should accommodate from 1,200 to 1,400 houses. The mansion, house, and policies will be added to the Stewart Public Park, which marches with Hilton estate. The price asked is £25,000, but this is thought somewhat large, and an offer has been made of £20,000. An arbiter has been called in, and it is believed a compromise will be reached. This will make the fifth estate acquired within recent years—Westburn, Torry, Forresterhill, and Hazlehead are proving valuable communal assets—and will complete the encirclement of the city by land the citizens can call their own. The irony of the situation lies in the fact that all these lands, for which the citizens of Aberdeen have had to pay dearly in recent years, were once the property of the city, but through gross carelessness or crass stupidity they were allowed in the dim and distant past to fall into other hands at what might truthfully be described at "the price of an old song." The moral is not difficult to point. The present proprietors of Hilton are Sir Hugh Kerr Anderson, M.D., F.R.S., Master of Gonville and Caius College, Cambridge, and his brother Sir Kenneth Skelton Anderson, K.C.M.G., Bt., the shipping magnate. The present proprietor's father, Mr. James Anderson, paid £20,000 for Hilton in 1873; of course, a great portion of the original estate has been sold since then.

THE LATE MR. C. HARMAN PAYNE.
(see p. 156.)

Imported Potatos.—Attention has been drawn to the fact that sacks of foreign Potatos do not weigh up to one hundred-weight, as is the case with British Potatos, and that consequently when prices are quoted "per sack" imported Potatos appear cheaper than they really are in comparison with British. The sale of Potatos is governed by the Corn Sales Act of 1921, which provides that any sale, unless it is made by weight only and in terms of the hundredweight of 112 lbs., shall be null and void. Potatos imported into the United Kingdom are, however, exempted from this provision so long as the sale provides for delivery in the original sacks in which the tubers were imported. In making their purchases, therefore, buyers should realise that a sack of imported Potatos need not necessarily contain 112 lbs., and, in fact, the sacks generally weigh less than 112 lbs. It will, of course, be understood that the above only applies when imported Potatos are bought or sold "per sack" or "per bag." If they are sold by the cwt. or by the ton, the purchaser is entitled to receive the full weight specified.

The "Albert Truffaut" Prize.—The late M. Albert Truffaut, whose obituary notice appeared in our issue of the 10th January, p. 30, has left to the French National Horticultural Society an income of Fs. 200.00 for the purpose of purchasing each year an object of Art, to be awarded as a Prize of Honour annually to a successful competitor in the exhibitions of the Society.

Honour for Belgian Horticulturists.—On February 12 Count de Kerchove de Denterghem, the Governor of East Flanders, in the name of His Majesty the King of the Belgians, decorated with the Cross and brevets of the rank of Officer of the "Ordre d'Orange Nassau," M. Lucien de Cock, Secretary of the Ghent Horticultural and Botanical Society, and M. Henri de Wilde, the designer of the Floralies of 1923. Those who attended the Ghent Floralies in that year will realise how well deserved are these distinctions, and will heartily congratulate our Belgian friends upon this appropriate recognition of their most successful efforts.

The Nature of Plant Species.—Discussing "Species" from the Plant-Breeders point of view at the Biological Section of the Royal Philosophical Society at Glasgow on the 13th inst., Professor J. M. E. Drummond, Director of the Scottish Plant-Breeding Station, said that the average Linnean species which resolved itself under cultivation into a number of smaller units commonly termed "varieties," could be further analysed into still smaller units, the "pure lines" and these may be separated from one another in the case of self-fertile plants, by the simple expedient of breeding in each generation from a single self-fertilised plant. Such pure lines have been proved to maintain their distinctive characters for over fifty generations, and there is no reason to doubt that if there be any unit of a higher order of magnitude than the individual, which represents the unit of evolution, that unit is the pure line. But fresh light has been thrown upon the species problem by the study of hybridisation, more especially as a result of the extraordinary development which this aspect of breeding work has undergone since the epoch-making discoveries of Mendel. This side of the question can be discussed more profitably by the animal-breeder, but the plant-breeder can no longer remain satisfied with the traditional definition of individual species largely on a basis of the relative degree of the development of certain differences of body form. Differentiae of a more concrete and absolute kind are required, and these can only be obtained by a laborious working out of the heritable factors or genes along the lines employed so successfully in the case of Drosophila by the Morgan school and to a less extent in Antirrhinum by E. Baur.

Appointments for the Ensuing Week.—Sunday, March 1: Wakefield and North of England Tulip Society's meeting. Monday, March 2: Ideal Home Exhibition at Olympia (23 days). Tuesday, March 3: Royal Caledonian Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting. Wednesday, March 4: Royal Agricultural Society of England Council meeting; National Viola and Pansy Society's meeting. Thursday, March 5: Nottingham and Notts. Chrysanthemum Society's meeting. Friday, March 6: Manchester and North of England Orchid Society's meeting; Dundee Horticultural Society's lecture; Western Commercial Horticultural Spring Show (2 days). Saturday, March 7: Blackburn and District Horticultural Society's meeting and lecture.

"Gardeners' Chronicle" Seventy-five Years Ago.—*The Scarlet Runner.*—In November of the year 1830, when I was at Lord Canterbury's, I saved a number of roots of Scarlet Runner and stored them in moderately-damp mould away from frost. These same roots were planted out in single rows, one foot asunder, some time in March or early April, the crowns being placed half-an-inch below the surface. Beans (Scarlet Runners) were sown in rows at the same time. The transplanted roots came into bearing just one month before the sown seed. This afforded me a lesson which I did not forget; I have had several roots three years' old, but one in particular I grew for seven years, and this one I exhibited at the May show at Chiswick in 1834. Many were surprised to see a Scarlet Runner ten feet high full of flowers and Beans, the produce of a plant forced in a vinery. From this little experiment I would infer that if cottagers saved their roots in autumn and put them carefully by, they would have this valuable vegetable a month earlier on their tables than they now do. Another way of saving the roots is to leave them in the ground all winter; but this plan is not to be recommended; the plants will have exhausted the ground very much during the summer, therefore they should be re-planted in fresh ground. I should mention here that if fine roots are wished for in autumn, care should be taken not to allow many seed pods to ripen, as the ripening process robs the roots of much of the returning and elaborated sap. I find another point worth recording with respect to dwarf French Beans. A few pans not wanted for potting were by chance placed out in a corner; this was in the beginning of April; they had been nearly killed by frost and red spider, etc.; ground was prepared for them on a south border; the plants before planting were dipped in strong brimstone water in case any spider should be alive on them. Two rows were planted and two rows were sown with the early Dun Beans; the transplanted ones looked badly for a fortnight or so, but almost as soon as they began to grow they showed blossom, and came into bearing three weeks before those from seed. This was in a warm garden on the banks of the Thames, belonging to the Under-Secretary for War. *James Cuthill, Forist, Camberwell.* [Care must be taken that these roots are not eaten. They are poisonous.] *Gard. Chron., March* 2, 1850.

Publications Received.—*Hand-list of Trees and Shrubs.* Price 4s. 6d. net. *Hand-list of Rock Garden Plants.* Price 2s. net. *Hand-list of Hardy Monocotyledons.* Price 1s. 6d. net. *Hand-list of Herbaceous Plants.* Price 2s. net. All obtainable from the Royal Botanic Gardens, Kew.

ALPINE GARDEN

SAXIFRAGA PETRASCHII.

The parents of this charming hybrid are stated to be S. tombeanensis and S. marginata rocheliana. I am rather sceptical, as no trace of S. tombeanensis can be seen in the specimen grown at Coombe House (Fig. 54). However, whatever its origin, S. Petraschii is well worth growing when flowered as shown in the illustration. The flowers are white, and when fully expanded appear almost salver-shaped, carried on stems about two inches long. A few stems may carry a pair of flowers, but this is not usually the case and seems rather due to the weather experienced during its period of early growth. The foliage is a pretty grey shade and looks very encrusted, but in reality the encrustation is mostly upon the edges of the small foliage.

Of considerable interest are the four tiny spots equally and evenly distributed on each fully developed leaf; they are replicas of four heavy spots of farina often seen on Primulas. The plant has a most remarkable trick of producing numerous buds in early spring, which lead one to expect a great floral display, but, alas, disappointment sometimes follows this promise, and cultivator's will observe that numbers of blooms completely fail to develop beyond the small bud stage. Meanwhile, the plant will maintain perfect health, and new growths appear at the base of the bud, forming a greater colony, which flower in great profusion the following season. This hybrid Saxifrage is classed among the large-flowered type, *i.e.*, the Kabschia section, and we treat it accordingly.

The specimen figured was exhibited at the Royal Horticultural Society's Hall on April 29, 1924. A Cultural Certificate was awarded; it was then twelve years old, and had been in a pan eight inches in diameter by five inches deep for seven years. The flowers of S. Petraschii are twice the size of those of its supposed parents. *Mark Mills.*

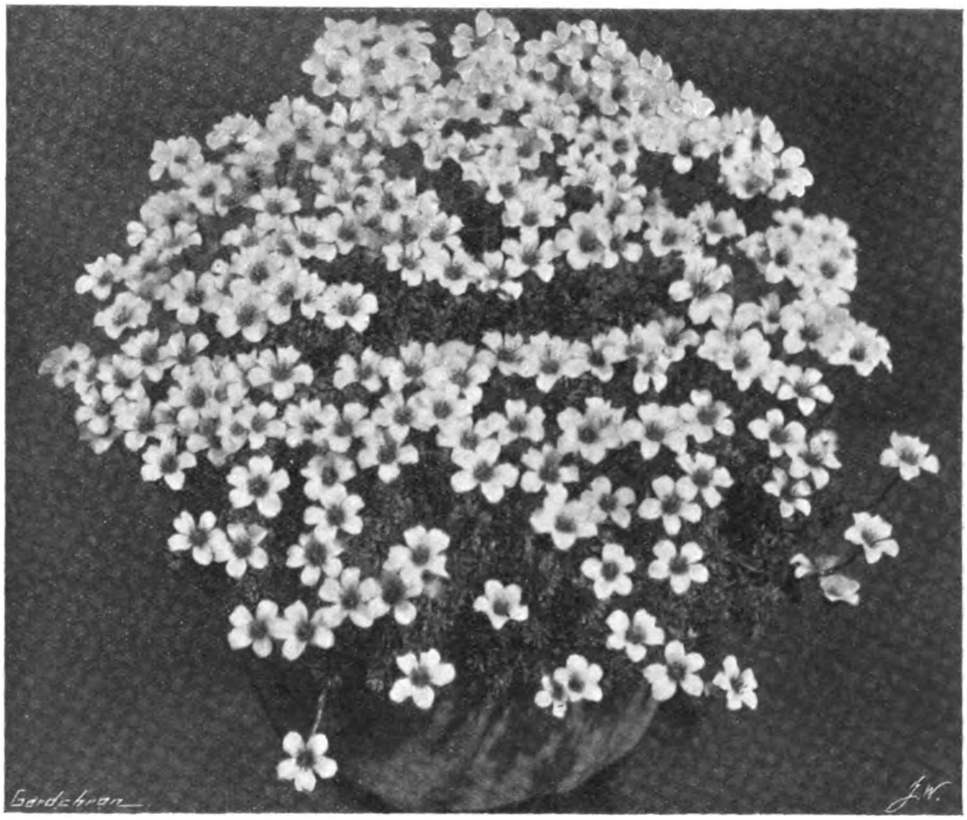

FIG. 54.—SAXIFRAGA PETRASCHII.

SEDUM PALMERI.

Of the many beautiful Mexican Stonecrops in cultivation, S. Palmeri may claim to be not only among the most attractive but one of the hardiest.

It makes a handsome tuft of foliage eight inches high; the rounded, fleshy leaves, which are one inch across, are smooth and glaucous, as are the stems. In these respects this species bears no little resemblance to the familiar S. Anacampseros, but when the terminal inflorescences each expand into several branches, three inches to four inches in length, and display numbers of large, golden-orange flowers, S. Palmeri becomes very far removed from the dismal purple of the European species mentioned.

S. Palmeri is hardy here in a sheltered, sunny nook, with a root-run that is stony and dry. It sometimes breaks into bloom so early as mid-February, but if the weather should be uncongenial, its flowering may be deferred until April or May. It is possible that our plants are in too poor a soil, for S. Palmeri appears to resent lack of moisture in early summer. *J.*

CYTISUS GLABRESCENS.

There is no more delightful plant of its kind for a warm, sunny rock-garden ledge of light, gritty soil than Cytisus (syn. Genista) glabrescens. The species is a native of the Lepontine Alps, and was introduced about twenty years ago. It is a low-growing plant of compact habit, seldom attaining to more than two feet in height, making a neat little bush of slender branches furnished with trifoliate, somewhat silky, leaves.

The bright yellow flowers, which are produced in small clusters on the previous season's wood, are of large size for so small a plant, being about half-an-inch long; a well-grown specimen of this Cytisus will be a mass of colour in May. A fully-exposed position should be selected for this shrub, which appears to be absolutely hardy. *J., North Wales.*

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Oncidiums.—The winter-blooming Oncidiums of the varicosum section, together with O. Forbesii and O. concolor will soon be passing out of flower, when they should be kept rather dry at the roots. Give them just sufficient water to keep the pseudo-bulbs from becoming shrivelled. The plants will soon begin to grow afresh, and any necessary re-potting should receive attention so soon as the roots develop from the base of the young growths. Pans form the most suitable receptacles, and they should be just large enough to accommodate the plants which need restricted rooting space. Pot moderately firmly, and place the base of the young shoots well down into the compost so that the young roots may bury themselves quickly, thus minimising the danger of damage by slugs and woodlice. These Oncidiums grow best when suspended in a house having an intermediate temperature.

Warm-house Orchids.—Many plants of the warm-growing section of Orchids will be showing signs of fresh root action; these include Angraecums, Aerides, Vandas, and Saccolabiums. Any necessary re-potting or top-dressing of the plants should be attended to at this period. Specimens that have lost many of their lower leaves are best re-potted when new roots are observed to be pushing out of the stem, whilst others that have retained their bottom leaves may not require re-potting, but the old materials should be removed from between the roots and fresh compost substituted. In re-potting these Orchids cut away the stem at the base to within a few inches of the living roots and place the plant in the pot so that the foliage is near to the compost; to achieve this it will probably be necessary to place the stem in the receptacle before putting in the drainage material; the pot may then be half filled with clean potsherds. Employ clean Sphagnum-moss as a rooting medium, mixing portions of broken flower pots among it to assist the free passage of water. Fill the receptacle to the rim with the moss and arrange it slightly higher in the middle, finishing with a layer of living heads of Sphagnum-moss over the surface.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Eucalypti.—These attractive plants are easily raised from seeds sown at the present time, and are very valuable for sub-tropical bedding. The seeds should be sown in heat and the seedlings grown on in a warm house until May, when they should be gradually hardened and prepared for planting out. E. Globulus makes very rapid growth, and in sheltered positions in the Southern counties will survive ordinary winters but it cannot be considered hardy. E. Gunnii is hardier but of much slower growth, and its habit is more spreading than that of E. Globulus. E. citriodora is well worth growing for its fragrant foliage alone.

Rock Plants from Seed.—The furnishing of the rock garden makes continuous demands for young plants, and many of them may be quite easily raised from seeds sown at the present time. Where Primulas are grown in variety there is always a demand for young plants. P. capitata, for example although perennial in its native habitat, is best treated as a biennial in our gardens as it almost always dies after having flowered. Other Primulas which may be sown now, and of which stocks of young plants are always valuable, are P. japonica P. Bulleyana, P. pulverulenta, P. rosea, P. sikkimensis, P. cortusoides, and P. frondosa. Of the Dianthi, D. caesius, D. neglectus, D. plumarius, D. graniticus, and D. arenarius, are easily raised from seeds, as also are Campanula caespitosa, C. garganica, and C. pusilla. Amongst other plants which may be sown now are Papaver alpinum, Linaria alpina, Silene alpestris Æthionema cordifolia, Tunica Saxifraga, Vittadinia triloba, and Androsaces, Gentians, Sedums, and Saxifragas in variety. The seed should be sown in well-drained pots or pans filled with fine, sandy soil. The most friutful source of bad germination is lack of moisture just as the embyro plant begins to develop, and great care should be taken that the pots are kept sufficiently moist during this period. A good plan is to plunge the pots in ashes or fibre in a large box or frame in a cool house, and cover them with a sheet of glass or a light to prevent loss of moisture by evaporation. The seed-pans should be examined frequently and removed to a more airy position so soon as the seedlings appear. The plants should be pricked off before they become crowded, and may be grown on in boxes in a cold frame until they are ready for putting into their permanent quarters.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Strawberries.—So soon as the earliest batch of Strawberry plants begins to flower, the blooms should be carefully pollinated; I find a hare's tail the most satisfactory thing for conveying the pollen to the flowers. Try and secure six to eight good shaped fruits to each pot, carefully removing all others. When swelling of the berries commences, support the trusses either by wires or small sticks placed so that the fruits hang clear of the pot. Two ties are generally sufficient. Remove all runners so soon as they develop and keep the foliage above the fruits. The house in which the plants are growing should be slightly drier during the flowering period than at an earlier stage, and do not syringe the fruits, otherwise they will soon damp. Give the roots occasional applications of very weak liquid manure until the fruits begin to colour. It is a great mistake to feed every time moisture is required, as is often done. The plants must never be allowed to suffer from drought and may, on bright days, require watering on three occasions. Keep a sharp watch for green fly and fumigate the house lightly on its first appearance.

Grape Room.—All Grapes that are hanging in the Grape room will now require inspection for damp berries. Keep the air dry and cool and the water changed. Cut off the end of the stalk in the water, when it seals up, otherwise the berries will soon shrivel. Be careful not to touch the berries with the hand, and keep the bloom intact.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Stove Foliage Plants.—These plants should now be examined and such as require it potted or top-dressed; their propagation may also be done now. Such plants as Codiaeums (Crotons), Dracaenas, Acalyphas, Pandanus, Aralia, and Ficus depreciate in decorative value as they become denuded of their lower leaves. The tops of "leggy" plants should be taken off and inserted in small pots, as cuttings, and be placed over strong bottom heat. In the case of Crotons and Dracaenas the heads of the plants may be rooted by means of the well-known method of "ringing," the last operation of which is to bind a thick covering of fresh moss tightly over the ring cut in the bark, keeping the moss moist by frequent syringings, whilst the last named plants may also be increased by dividing the stems into small portions, which should be laid in sand or fibre over bottom heat. Young plants which were rooted last autumn should be transferred to slightly larger pots now. Use well-drained pots and an open compost of fibrous loam, peat, sand, and charcoal, though loam should preponderate in the soil for Codiaeums (Crotons). Amongst the useful and easily-grown foliage plants are the following:—

Curculigo recurvata.—This is a very ornamental stove foliage plant, with dark green, recurving foliage of Palm-like growth. It is easy of cultivation and may be readily increased by division of the suckers. It should be grown in small pots in a compost comprising peat, loam, and sand. There is also a variegated form, C. recurvata variegata.

Panicum plicatum.—A still more graceful plant in my opinion, though very like Curculigo in appearance, of the easiest cultivation, and one of the most useful of its kind in the hands of the decorator. This plant is easily raised from seeds, or it may be propagated by division.

Panax Victoria—This is a prettily variegated stove plant of plumose habit, and useful as a table plant when small. It is propagated by cuttings which may be obtained by cutting down the old plants to within an inch or two of the soil, and plunging the stools in a frame over a hot-bed. A suitable compost is one of peat, loam, and leaf-mould in equal parts, with a free addition of sharp sand and some broken charcoal.

Eulalia gracillima variegata.—This pretty, variegated Grass is valuable, grown in small pots as a decorative plant, and responds to warm-house treatment. Old plants should be divided into small pieces and the portions placed in pots of four inches and five inches diameter. Pot firmly, using an open compost; water sparingly until the plants are growing freely.

The Greenhouse.—To the amateur gardener possessing a greenhouse the beautiful Nicotiana affinis hybrids are deserving of attention as they are easy to grow, and with proper care may be relied upon to continue in flower for several weeks. Sow the seeds thinly in a pan and prick the seedlings off when they are large enough into other pans; later, pot them singly into three-inch pots, and finally into six-inch receptacles. The soil used at the final potting may consist of three parts loam, one part leaf-mould, and one part well-decayed horse manure, with sand and charcoal added. Shade the plants from bright sunshine.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Spraying.—The spraying machines should be got in readiness for use and spraying done at every opportunity afforded by still and dry days. The first spraying is generally with lime sulphur, according to the directions of the makers, or with alkali if the trees are badly infested with lichen. Spraying once in two or three years with alkali wash is sufficient; if used oftener the bark of the tree gets hard and cracks. Bordeaux mixture, with a third its bulk of alkali added will keep the tree quite clean. When spraying in the kitchen garden care should be taken not to allow the spray fluid to fall on vegetables, and in windy weather it may be necessary to stretch canvas on stakes or poles to prevent this; the screen may be easily moved from place to place as required. While the spraying is in progress the operator should see that every part of the tree is wetted, and that material is not wasted by heavy sprayings running off the trees.

Birds and Fruit Buds.—Where birds are troublesome in picking out the buds of Gooseberries, Red Currants and White Currants, the safest thing to do is to protect the bushes with fish netting; if the Gooseberries are in bush form the arranging of the netting is an awkward business unless these fruits are grown in a plot by themselves. The best method is to put up a post at each corner and stretch a few wires from post to post at the sides to keep the netting from coming in contact with the bushes. When the Gooseberries are trained on horizontal wires the fixing of the netting is a much simpler operation. Red Currants and White Currants, if in bush form, may be dealt with by tying the leading branches in with strong string and winding the net around the bush; this applies only to isolated bushes growing in different parts of the garden. Very old netting should be used for this purpose; it saves cutting sound nets. I recommend square-inch mesh netting. When netting is not available, spraying the bushes with Quassia extract is effective for a time. Soot and lime are often used as deterrents to birds, and these are suitable provided the distasteful materials are all washed off by rains before the fruit is ready for picking. I do not recommend the use of these, but they have an advantage in providing a top-dressing for the bushes.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Tomatos.—Sow another batch of Tomato seeds in heat and germinate them in a temperature of 60° to 65°. When the seedlings are large enough to handle transfer them singly to 60-pots and place the pots near to the roof-glass to prevent the plants becoming drawn and weak. Each grower has his favourite variety and the requirements of each establishment must determine what sort shall be grown. For general use the three varieties, Best of All, Sunrise and Aviator, will be found excellent; if yellow varieties are required, Golden Sunrise and Golden Queen may be recommended, for the flavour of these two varieties is superior to that of many of the thicker-skinned, yellow varieties.

Cucumbers.—Beds should now be made ready for planting the first batch of Cucumbers. A hot-bed should be made of leaves and fresh, long stable litter. When the materials have been well mixed, use sufficient to make the bed at least two feet deep. After it has been trodden firmly, cover the bed with a layer of inverted turves and so soon as the heat of fermentation becomes steady, mix the compost ready for the plants. The compost should consist of two parts of good loam and one part of old Mushroom bed manure with the addition of mortar rubble and charcoal; if old Mushroom-bed manure is not available, use leaf-mould instead. When the compost has become thoroughly warmed through the Cucumbers may be planted in the bed at a distance of two-and-a-half feet apart.

Salsify.—Seeds of this root vegetable may be sown at any time now when the ground is in good condition. Draw drills one foot apart and when seedlings are large enough to handle, thin them to about six inches apart in the rows. If extra fine, straight roots are required for show or other purposes, make holes a foot deep with a dibber and fill the holes with finely sifted soil. Sow three or four seeds in the centre of each station and finally thin the seedlings to one.

Early Borders.—Warm borders that can be spared for the purpose should be sown with early Carrots and Turnips. Early Market and Champion Horn Carrots, or any of the quickly maturing varieties may be sown, and the Early White or Red Milan types and Early Snowball Turnips will be found as suitable as any for first supplies of this vegetable out-of-doors.

Vegetable Marrows.—If a few early fruits of this vegetable are required, a few seeds should be sown singly in large 60-sized pots. Place the pots in a temperature of 60° until the seeds germinate, and when the resultant seedlings are well rooted, grow them under a little cooler treatment before planting them out, either in heated pits or on frames placed over hot-beds. Choose one of the compact-growing varieties for this sowing. Vegetable Marorws are always greatly appreciated when they may be had for use before outdoor supplies are available.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Hardy Primulas.—Although many of the hardy Primulas are perennials they are very short-lived in these gardens, and in order to maintain a succession of flowering plants, seeds should be sown annually. This may be done now. The seed-pots or seed-pans should contain a fair amount of drainage material and be filled with soil, to which has been added a fair proportion of sifted peat, also some sand and a little crushed charcoal. After the seeds are sown stand the seed-pans in a cool house and shade them until the seedlings appear. Primula seed is sometimes a long time in germinating. The seedlings, after being pricked off, may be grown on the first year in a cold frame and given partial shade. When planting them out in their permanent quarters choose a cool, shady, position. The ground in which they are planted may receive the addition of peat and leaf-mould. The following are a few species that are perfectly hardy and respond to the above treatment:—Primula Bulleyana, P. Cockburniana, P. cortusoides, P. denticulata, P. farinosa, P. japonica, P. pulverulenta, P. rosea, P. sikkimensis and P. Veitchii.

Shallots and Garlic.—Bulbs of both these vegetables may be planted now in rows made one foot apart, putting the bulbs six inches asunder in the rows. Press them in the ground to about half their depth.

Cauliflowers.—Plants raised from seeds sown in the autumn and wintered in cold frames may, with advantage, be transplanted into another frame; they will repay for this little extra labour when planting them out later in the garden.

ORCHID NOTES AND GLEANINGS.

HAEMARIA DISCOLOR VAR. OTLETAE.

The Genus Haemaria was formerly grouped under Goodyera, a genus named in honour of John Goodyer, a British botanist, who assisted Johnson in his edition of Gerards' *Herbal*. It differs, however, in having divergent instead of connivent lateral sepals, and a clawed instead of a sessile lip.

The species number but very few and all are natives of China, Cochin China, and the Malayan Archipelago.

Haemaria discolor (two-coloured) is a very free-flowering one, and there are several varieties. The flowers, which are very similar in all the varieties, are pure white, with a lemon-yellow blotch on the lip; the spikes are upright and, when fully-developed are about ten inches high.

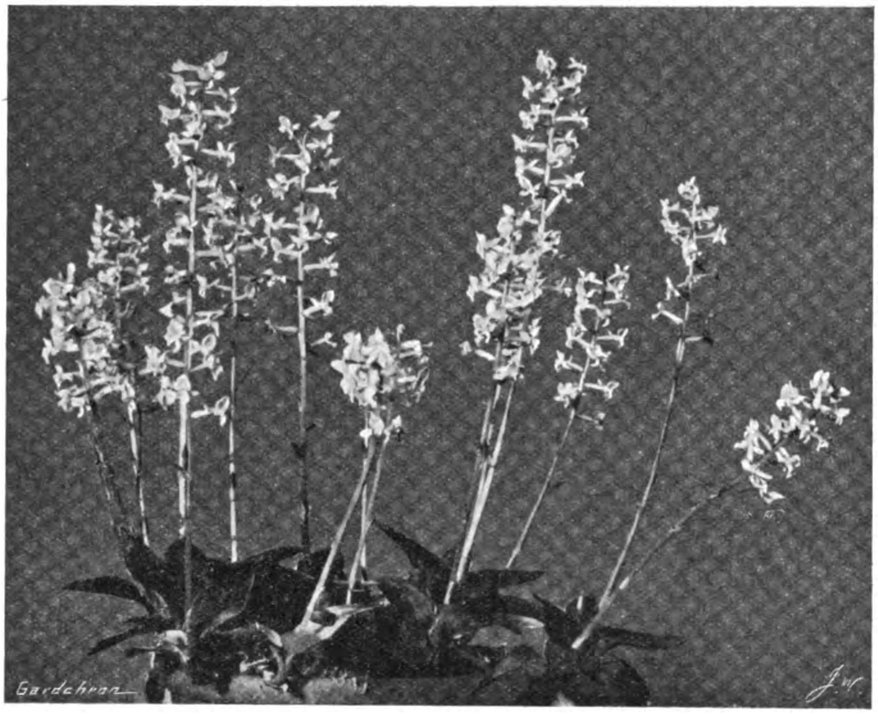

FIG. 55.—HAEMARIA DISCOLOR VAR. OTLETAE.

The inflorescences are produced in mid-winter from the centre of the growths and last about two months in full beauty. The leaves of the variety Otletae (Fig. 55) are a deep, velvety, Olive-green on the upper surface, with a narrow stripe of white down the centre, the underside being a dull purple.

Other varieties of this species are H. discolor var. Dawsoniana, which has deep, bronzy-green leaves, marked with seven bold lines of a golden-coppery hue, connected by fine reticulations of a similar colour.

H. discolor var. Ordiana has leaves of a vivid green, marked with gold lines and reticulations.

These Orchids are often grown under a bell glass, and when I commenced to grow them I tried this method, but with very indifferent results. The atmosphere in South Lancashire, though very dirty, is pre-eminently suited to this class of Orchid, owing to the large amount of natural vapour in the air.

Our plants are grown in a close, warm, Cypripedium seedling house, and shaded on bright days. They are potted every alternate year in a mixture of very fibrous Kent loam and Sphagnum-moss, and watered with great care until well-rooted. *B. J. Beckton, Irlams O'th' Height, Manchester.*

ODONTOGLOSSUMS LUSTRE AND MAGNET.

First flowers of these very distinct Odontoglossums are sent by Messrs. Stuart Low and Co., Jarvisbrook, Sussex.

Odontoglossum Lustre (McNabianum × ardentissimum) has the round shape of O. Pescatorei and is of very distinct colour, the sepals and petals being copper-red with a narrow, cream-white margin. The lip is reddish-purple at the base and yellow tinged with red in front.

Odontoglossum Magnet (Lambeauianum × Lakiniae) is a model flower, the sepals and petals being equally broad and of a dark reddish-claret colour with a few cream-white intersecting markings. The lip is large and circular in outline, cream-white with evenly distributed claret-red blotches. The white column has dark purple lines at the back.

CYPRIPEDIUM MEMORIA F. M. OGILVIE VAR. REX.

The perfect beauty of this noble form of the best hybrid Cypripedium ever raised, for which Messrs. Armstrong and Brown, Tunbridge Wells, received a First-Class Certificate at the Royal Horticultural Society on February 10 (see *Gard. Chron.*, February 14, p. 117) suggests that it and other superb sectional types should be seeded with their own pollen and raised true rather than being crossed with another which would only obscure in the progeny the fine features it possesses. Raised true from its own seeds the batch would probably vary and give an interesting lesson in plant-breeding.

Some of the seedlings would doubtless be inferior to the parent, and a few equally good, while by rare good fortune an even better flower might be secured.

C. Memoria F. M. Ogilvie (Curtmannii × Pyramus) is a grand testimonial to the original raiser, G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), who also raised both parents of this fine hybrid and many other Cypripediums that are in the front rank.

EPIPENDRUM ENDRESIO-WALLISII.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), showed in his group at the Royal Horticultural Society's meeting on January 27, a selection of this pretty winter-flowering Epidendrum which has been raised in his garden by crossing the yellow and purple E. Wallisii and the little white and violet E. Endresii, both of which species have been in his collection from the original importations.

The plants are still giving a good supply of flowers, which are two inches across and vary considerably in colour, the darkest having the labellums coloured dark violet while the lighter forms have mauve lines on a white ground. The inflorescence is terminal, with lateral sprays also on the top of the slender, reed-like stems. The cross was originally raised and flowered by Messrs. J. Veitch and Sons at Chelsea, who obtained a First-Class Certificate for it on January 12, 1892.

ODONTIODA ARGUS.

A flower of this finely coloured Odontioda, raised by crossing Odontoglossum eximium and Oda. Sibyl, is sent by Clive Cookson, Esq., Nether Waden, Hexham-on-Tyne (gr. Mr. W. J. Stables).

Odontoglossum crispum and O. Pescatorei, which enter largely into the composition of this hybrid, give large size and fine shape, whilst Cochlioda Noezliana is responsible for the bright ruby-red of the sepals and petals, which have a few small white lines and white markings on the margins and tips.

The lip has a prominent yellow crest surrounded by a white band, which is enclosed by an irregular ruby-red line; the front of the lip is white with small red lines around the edge. The reverse side of the flower shows the colour of the front with a white midrib.

INDOOR PLANTS.

LACHENALIAS.

There have been one or two references to Lachenalias in your valuable paper, and I venture to offer another from one of your amateur readers who has been captivated by the glorious beauty of a large and varied collection of these flowers grown by Mr. William Mauger in Guernsey. During a stay of several weeks in the island I have been able to make an almost daily visit to the collection, and have watched the development of the plants into full beauty, and experienced an ever-increasing fascination and surprise.

The house not only contains a large number of plants in more than twenty named varieties, but also very many seedlings of chosen parentage, producing flowers of extraordinary beauty, both in colour and form; chromes and crimsons, with an occasional touch of emerald, have arranged themselves in gorgeous and varied combinations, and in many instances an overflow of colour is spared to provide stems and leaves with a bespangling of very attractive beauty spots.

The accompanying photograph [not suitable for reproduction—Eds.] is of a representative plant of about average vigour; the large spike is bearing between thirty and forty bells, some not yet developed; the leaves are broad and graceful, beautifully spotted, some measuring nine inches by nearly three inches; the individual bells are more campanulate than in such an old representative kind as pendula, and the trumpet-shaped centre contributes an added grace of form.

It will be surprising if these new hybrids do not make a very wide appeal; they surely only want to be known to find their way into every plant-house from which frost can be excluded, for they are easy to cultivate, early to bloom, and fascinating in their prolonged beauty. *W. D.*

PASSIFLORA AND TACSONIA

Passifloras and Tacsonias are beautiful, free-growing, evergreen climbers closely allied to each other. The Tacsonia is sometimes regarded as a section of the Passiflora, from which it may readily be distinguished by the elongated calyx tube; members of both genera require similar treatment.

Passifloras, or Passion flowers—the name having reference to the filaments or rays, and other parts of the flower being likened to the nails, cross, etc., associated with Christ's crucifixion—are robust-habited, free-blooming climbers, many of them most suitable for covering the pillars, rafters, and roofs of cool greenhouses or conservatories, whilst others require a stove or warm temperate house. In suitable conditions the plants grow luxuriantly, producing large flowers of various shades of colours on long, pendant stalks. As many greenhouses and conservatories are now receiving their annual cleansing a good opportunity is afforded for planting these climbers. In planting Passifloras and Tacsonias take care that the roots are given sufficient room to spread, and see that the drainage is efficient, as that is essential to prevent the soil from becoming sour. The latter should consist of a mixture of rough, turfy loam, fibrous peat, or leaf-mould, lightened with silver sand.

A few of the choicest Passifloras for cultivation in the stove or warm temperate house are P. racemosa (syn. princeps), a very distinct and beautiful species which should be grown in every collection of climbers. The plant does well in any ordinary warm temperate house; it is very free flowering, of neat habit, producing racemes of rich reddish-scarlet flowers, which last for a very long time. P. edulis is grown more for its fruits than for its flowers. This species fruits freely in a stove temperature but does not thrive in a cool house. P. quadrangularis is a very strong-growing variety suitable for the stove house; the flowers are red, white, and purple. This species also bears fruits, but the flowers require to be pollinated by means of a small camel-hair brush. P. raddiana (syn. kermesina) flowers towards the autumn; it is very distinct with blood-red flowers. P. alata is a pretty species with green, blue, and red flowers; this Passion flower blooms early in the season. P. Decaisneana is a vigorous grower, with carmine, purple, and white flowers.

All those described require a winter temperature from 55° to 60°. The following may be grown in any ordinary cool house having a winter temperature of 45° to 50°. P. alato-coerulea (syn. P. Fordtii), the petals white inside, the calyx rose, and the filaments blue and white; P. coerulea racemosa rubra, a very distinct, free-flowering variety of neat habit and moderate growth; P. coerulea Constance Elliott, a very free-flowering hybrid producing white flowers, which may be grown out-of-doors in warm, sunny positions in mild winters with slight protection from the frost; P. Bellottii, a vigorous-growing variety, very free-flowering, the sepals flesh colour, the petals delicate rose, and the rays of the corona blue; P. actinia, a late-flowering species with whitish flowers; P. Allardii, a hybrid between P. quadrangularis and the variety Constance Elliott, with almost pure white petals that have just a shade of pink, and the filaments of the corona deep cobalt blue; this is a very free-flowering plant. There are many others but those described are amongst the best.

Tacsonias are amongst the most useful free-flowering climbers cultivated for covering pillars, rafters, and roofs of any ordinary cool conservatory, and when the plants are in bloom it is a very pretty sight to see the flower tubes hanging from the roof in large quantities. Tacsonias succeed in a winter temperature of about 40° to 45° and thrive and flower better planted out than when grown in pots. When in full growth they should be neatly trained to the roof or rafters. Cut out all superfluous growths in order that plenty of light may enter the plants and favour their flowering. Amongst the best Tacsonias for cultivating are T. Van Volxemii, a crimson-scarlet, very showy species and one of the finest; T. exoniensis, a strong grower, with sepals and petals bright rosy pink, and a violet throat—it is a hybrid between T. mollissima and T. Van Volxemii; T. mollissima, a very pretty free-flowering, rose coloured species, blooming during August and September; the fruits of this species are edible; T. insignis (syn. Passiflora insignis), a very distinct species of moderate growth producing large flowers of a luminous crimson colour, which changes after gathering to violet-rose; T. Smythiana, a very handsome hybrid, the flowers measuring four inches to five inches in length, and of a peculiar and most distinct colour—a very brilliant rosy-salmon pink; and T. ignea (syn. manicata), a very pretty neat growing species, with scarlet flowers and distinct.

Tacsonias are easily increased by cuttings made of half-ripened shoots, inserted any time during the summer, and rooted in slight bottom heat under a handlight or frame. The cuttings should not be allowed to flag. Grow them in soil as recommended for Passifloras.

When in full growth Tacsonias require plenty of water but not so much as would sodden the soil. During the winter they only require sufficient moisture to prevent them from flagging.

The majority of Passifloras and Tacsonias are very strong growers and require much attention in regulating and thinning the shoots, otherwise the growths will become entangled. *John Heal, V.M.H.*

HARDY FLOWER BORDER.

MYOSOTIDIUM NOBILE.

THIS beautiful plant is not seen so frequently at exhibitions as formerly and the purpose of this note is to draw attention of it to those who are unacquainted with the plant for its value for early flowering. Some years ago the late Mr. James Douglas exhibited this plant frequently at the spring meetings of the Royal Horticultural Society and it always attracted considerable notice from visitors. Mr. Douglas grew the plant exceptionally well and flowered it splendidly. It is like a giant Forget-me-not, indeed it goes by the common name of the Chatham Island Forget-me-not, for it is a native of that British island, which lies some four hundred miles south-east of New Zealand.

The plant needs a moist, sheltered situation and a little protection in very severe weather. It has large, handsome, glossy green leaves and produces dense, paniculate racemes of white and rich blue flowers.

As a rooting-medium loam mixed with sand and a few lumps of charcoal is suitable, and if the little extra attention in protecting the plant during very severe weather is afforded, it will repay for the trouble with the most glorious display of blossom in the early spring. Mr. Douglas's specimens were exhibited in very large pots or tubs and where this method of growing the plant is adopted it is quite easy to afford it protection by introducing it to a cool greenhouse in winter. *G.*

FLOWER GARDEN.

NEMESIA STRUMOSA.

WITHIN recent years this beautiful South African annual has become very popular as a bedding plant because of its floriferousness and long season of blooming.

It is equally valuable as a pot plant for conservatory decoration. If seeds are sown early in March and the plants therefrom flowered in 48-sized pots, they will continue in bloom over a long period.

I value it most as a summer bedding plant, when grouped in masses in front of large beds and associated with such plants as Antirrhinums, Gladioli, East Lothian, Perfection, and summer bedding Stocks.

The members of the large-flowered section have been greatly improved in size and richness of colours and are simply gorgeous, and it is to this strain that we owe the popularity of the Nemesia at the present time.

The Nemesia does equally as well in wet seasons as in dry ones and will give a continuous show of blooms throughout the summer until cut down by frost, indeed I do not know of another plant that comes into bloom so soon after being planted out in its permanent quarters.

It is advisable to sow the seeds thinly in pans or boxes about the latter end of March in a mixture consisting of fibrous loam, leaf-mould, and a small quantity of wood ash. No more fire heat than is necessary should be used, as the plant resents a high temperature.

When the seedlings are large enough they should be pricked out in frames quite two inches apart either way. My practice is to prick them out in frames from which an early crop of Potatos has been lifted, without adding any lightening material to the soil. If grown under cool conditions in their early stages, the plants will make nice bushy specimens for planting out early in May at a distance of about six inches apart. *J. A. Kirkwood.*

TREES AND SHRUBS.

DAPHNE LAUREOLA.

SINCE my book *Trees and Shrubs Hardy in the British Isles* was published in 1914, no species mentioned therein has involved me in so much correspondence as Daphne Laureola. I stated therein that the flowers of this shrub are without fragrance. The Editor of *The Gardeners' Chronicle* informs me that, arising out of the illustration which appeared in the issue of January 31, (p. 73), several correspondents have writen to him disputing the statement made in the accompanying note that the flowers of Daphne Laureola are odourless. One correspondent sent two flowering sprays which the Editor states were "sweetly fragrant" when he received them, (see p. 153) but afterwards appeared to be odourless. These sprays have been kindly forwarded to me and are certainly true D. Laureola (Fig. 56). During the two days I have had them in a warm room, in water, I have not been able to detect any scent. I may say incidently that the figure at page 73 does not seem to me to represent D. Laureola, but D. pontica, a species often confounded with it, but which differs in producing its flowers two months hence at the base of the new shoots, whereas those of D. Laureola come in the leaf-axils of the shoots made the previous summer and before new growth appears. This, however, does not concern the question of the fragrance, or absence of it, in the true D. Laureola.

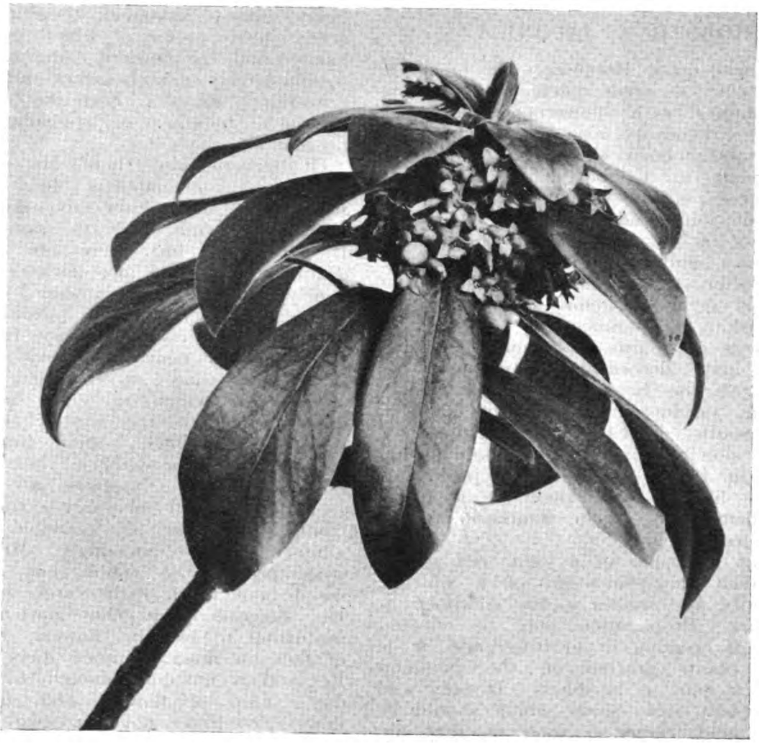

FIG. 56.—DAPHNE LAUREOLA.

I remember very well when writing up the Daphnes for my book, I went several times to a plant then in flower at Kew, but could never detect any scent. But knowing the fragrance so common to the genus, and judging from the colour of the blossoms that they *ought* to be fragrant, I consulted several authorities, including Dr. Masters in the *Treasury of Botany* (Vol. I. p. 383), Bentham and Hooker in their *British Flora* (p. 388), and Schneider in his *Handbuch der Laubholzkunde* (Vol. II., p. 399), and found they all agreed in describing the flowers as having no odour. Added to my own experience that seemed sufficient, and I repeated the statement.

The first to dispute it was Miss Ellen Willmott, who brought flower-bearing twigs to show to me at one of the Royal Horticultural Society's meetings at Vincent Square. These were undoubtedly sweetly scented. Some time ago a small controversy on the matter occurred in one of your contemporaries, in which Sir Herbert Maxwell took part. If I remember rightly Sir Herbert's own experience was that he had not found this Daphne to be fragrant at Monreith, but that plants growing elsewhere had certainly an intermittent fragrance. The truth seems to be that the flowers of some plants are not normally fragrant at all, but in other plants are fragrant at times, and I have amended to this effect the note on this shrub in the last edition of my book. *W. J. Bean, Kew.*

HYDRANGEA PETIOLARIS.

THIS plant is a very useful climber, hardy in the south, and possessing the advantage of being self-clinging. The flowers are white and produced from June onwards, in large, broad cymes.

Hydrangea petiolaris is very attractive when used for covering old tree stumps. In the north this species requires the protection of a wall. The plant is also known as H. scandens. *C. Ruse, The Hyde Gardens, near Luton.*

PINUS SABINIANA,

THE Digger Pine is a native of California growing from 250 feet to 4,900 feet elevation. It is found on the dry and hot foot-hills of the inner Coast Range along the Sacramento Valley and the Sierra Nevada, thoughout almost the whole length of California. Douglas discovered this remarkable Pine in 1826, but it was six years later (1832) before he was in a position to first introduce the Digger

Pine by means of seeds collected on behalf of the Royal Horticultural Society.

P. Sabiniana is a tree forty feet to eighty feet in height, the trunk frequently growing slanting or forking when not more than fifteen feet to twenty-five feet high. The leaves are in threes, seven inches to nine inches long, sparsely arranged, giving the tree a distinctively thin appearance, though they remain on the tree for three years. The remarkably distinct, rugged, spiny-looking cones are six inches to ten inches long and four inches to six inches wide, and remain on the trees from two to seven years. The tallest trees recorded in cultivation in this country are between sixty feet and seventy feet high, specimens of this height growing at Kew, Ledbury, Madresfield Court, and elsewhere.

A specimen branch from the Royal Botanic Gardens, Kew, was exhibited at the meeting of the Royal Horticultural Society on the 10th inst. (see p. 117). *A. O.*

ERIOBOTRYA JAPONICA.

The natural order Rosaceae, the members of which play a great part in furnishing our shrubberies with flowering trees and shrubs of great beauty, also provides us with an ornamental foliage shrub of more than ordinary merit in Eriobotrya japonica. Its large, evergreen, elliptic-lanceolate leaves, often over a foot long and three or four inches wide, are of a deep, shining green on the upper surface and grey underneath. They are borne alternately on the branches, uniting into rosettes at the extremities, and give the plant a striking appearance.

The flowers are borne in terminal corymbs but have little decorative value, and, as they open at the beginning of the winter they seldom produce fruits in this country.

In the South of France the fruits set freely, grow slowly during the winter and spring, and ripen in July. The fruit is juicy and of delicate flavour, and there is a fairly extensive demand for it in Southern France and Northern Italy.

The plant flourishes in a light, rich loam, and if given the protection of a wall it grows rapidly and makes a fine specimen in a few years. Propagation may be effected by means of layering or grafting, and it is said that plants grafted on the common Quince stock gain in hardiness. It may also be raised easily from seeds, which should be sown in a cold frame so soon as they are ripe.

KALMIAS.

This genus of North American Ericaceous plants furnishes our gardens with several delightful evergreen shrubs of considerable decorative merit. They thrive in a cool, moist soil, especially of a peaty nature, and prefer an open position. A gentle slope with south or south-west aspect suits them admirably, and they are ideal subjects for growing in association with Azaleas and Rhododendrons.

K. angustifolium is a dwarf shrub seldom exceeding two or three feet in height, bearing its bright red flowers at about the end of May.

K. glauca is another equally desirable shrub, somewhat dwarfer but less compact in habit, and flowering a few weeks earlier.

K. latifolia is probably the best-known and most widely grown species, and although inclined to become leggy after a few years, it is well worth growing. It has handsome, bright green foliage and dense, terminal clusters of delicate pink, wax-like flowers. The plant commences to flower at the end of May and continues in bloom through the early summer.

Kalmias may be propagated from cuttings of partially ripened growths inserted in sandy soil in a shady position, and covered with a bell-glass. Seeds may also be sown in pans, and germinated in a cold frame, in which the seedlings should be grown on until they are large enough to be transferred to the open. *W. Auton.*

NOTICES OF BOOKS.

Shrubs for Amateurs.

Mr. W. J. Bean has performed a useful service in drawing the attention of owners of small gardens to their general neglect of the cultivation of hardy shrubs; and he has performed a yet more useful service in showing them in his recently published volume* how they may remedy their neglect. It is difficult indeed to understand why even the smallest of gardens should not possess at all events a few of the less rampant, early-flowering shrubs, which do so much to make the garden beautiful before the usual herbaceous members of it have begun to blossom. A single bush of Cytisus praecox—where the soil permits of its growth; of Spiraea Thunbergii, which is covered in March with a snow of flowers; or of Magnolia stellata, none of which need be left to grow too large—would lend distinction to any garden and give pleasure to every owner. Moreover, there are the evergreen shrubs, some of which make beautiful backgrounds to borders. Among them is the comparatively new Lonicera nitida with its graceful, almost Fern-like foliage, its wonderful tolerance of transplanting and of pruning.

Of Berberis also there are species of all sizes and amenability to training. B. stenophylla may grow too large as may also B. Darwinii, and the same is true of B. Wilsoniae; but there are others which do not ramp and are either evergreen or nearly so, B. polyantha, for example, although described as deciduous, gives seedlings—which anyone may raise—some of which are as nearly as may be evergreen. And even those which shed their leaves have stems which in grace and colouring are beautiful all the winter. Cistus, again, is a genus which suffers from unmerited neglect. Anyone with a wall should grow C. corbariensis; it matters not whether the ground be stiff or only loamy; provided plenty of water is available it and its allies will thrive amazingly. Mr. Bean, it is true, praises the genus, but for our part we do not think with warm enough praise. He suggests that the gardener must be matutinal to see the flowers, but in point of fact on most summer days the sun in England is not hot enough to destroy the day's crop of flowers and, moreover, the flowers continue not for two months, but for well over three. It is true that report calls the Cistuses tender; but where they get water enough these dry-climate plants grow vigorously and withstand ordinary winters. Even though they are apt to die off as they are said to do, how easy it is to have provision for their replenishment. A cutting stuck in sand in July is rooted by the autumn and ready for planting out in spring. C. algavensis—if Cistus it be, with evergreen, greyish-foliage—is worth a place for leafage alone. Then there are the Forsythias, of which some at all events may be kept in bounds to become each spring a smother of yellow flowers. F. suspensa may need the shelter of a wall and a large place in which to display its charms, but the hybrids which go by the names intermedia and its variety spectabilis need not be allowed to grow out of hand. For gardeners with limeless soil there are the Heaths, of which some begin to flower in January and others carry on the flowering throughout the year. Olearia Haastii is a shrub which is always trim, evergreen and beautiful, with abundant white flowers.

Genista aetnensis, which Mr. Bean calls "lanky," is among the most beautiful late flowering shrubs and may be trained on a single stem to send a cascade of flowering branches flowing downward to the ground. Cytisus Andreanus is another good plant for soils lacking lime, and C. Dallimorei, where it does well, is charming. What gardener would not grow if he could—and it is "chancey," mocking the efforts of the clever and delighting in cottage gardens—Daphne Mezereum, either the purple-red flowered type, or the cream or pure white variety. The early flowers which precede the leaves are a herald of the floriferousness of summer with all the daintiness of spring. Another shrub which is worth its place in any garden and yet but rarely seen is Decaisnea Fargesii, not everybody's plant, with stems and leaves of a bluish-green—the former arching—and with fruits of a dark maroon-purple, lasting almost to the end of the year. It needs, however, ample space and isolation in which to display its symmetry and charm. But the list is endless. Even Mr. Bean's little book contains the names of more shrubs than the ordinary large garden contains, but nevertheless it will, we think, amply fulfil its purpose. The gardener who elects to start with one or two shrubs will not stop there. He will find that as the shrubs grow so does his love of them, and he will discover that by careful grouping of deciduous and evergreens he can augment the beauty of his garden without discarding the herbaceous flowers which have and deserve a permanent place in the garden.

When the amateur has hived all the stores of knowledge contained in the pages of the small book he may turn to Mr. Bean's larger work on the same subject and share by its perusal the pleasure and edification which it has given and gives still to all who cultivate trees and shrubs.

Practical Pruning.*

Writers on pruning too often either follow one another like sheep or else advance fanciful theories of their own which have no scientific basis. It is refreshing, therefore, to find a book by an author who has done neither of these things. Obviously he knows his subject thoroughly from experience and is familiar with the recent work of research stations bearing on the matter. Eminently practical and sensible correctly describes the methods of pruning advised.

In the case of orchard trees, instead of the annual close-pruning butchery of the old school, lighter and more natural treatment is recommended after the first few years of hard pruning to form the foundation of the tree. A wise distinction is made between permanent and temporary trees, the latter being more lightly dealt with from the start in order to bring them quickly into bearing, whilst the permanent tree is not to be induced to bear heavy crops before it has attained sufficient vigour to carry them without danger. With regard to the first cutting back of newly planted trees, whether it should be done at once, or on the swelling of the buds, or after a year's interval, the author sensibly remarks that, as each of these methods is practised by successful growers, it cannot be held that one has any particular advantage over the others. For Pears which are getting old, and which make a great show of bloom followed by little fruit, thinning the spurs to six inches apart is advised. For Plums, once the tree has been formed, pruning is restricted to the mere removal of dead wood and crossing branches. The training of maiden fruit trees for all kinds of orchard and restricted specimens, and their subsequent pruning, are dealt with, and bush fruits are included, the author's remarks in all cases being brief, but much to the point. There is a chapter also on the pruning of Roses and another on spraying. The latter is less satisfactory than the rest of the book, particularly in respect to the reliance placed on lime-sulphur as an insecticide. *M. G.*

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* *Shrubs for Amateurs.* By W. J. Bean, Curator of the Royal Gardens, Kew. Country Life Library, 20, Tavistock Street, W.C. 2. Price 5s. net.

* *Practical Pruning.* By J. W. Morton. 137 pp. Illustrated. London: The Lockwood Press, 1, Mitre Court, Fleet Street. Price 2s. 6d. net.

KEW NOTES.

SOME TREES AND SHRUBS IN FLOWER.

The most interesting features of the outdoor gardens at Kew at the present time are the numerous trees and shrubs already blooming or on the point of expanding their blossoms. Several species are in flower in the more purely decorative parts of the garden, but the greater number is to be found in the collections in the various beds in the Arboretum. It is surprising how soon after the New Year commences certain trees and shrubs seem to wake from their winter sleep, and when every allowance is made for the exceptionally mild winter not a few gardeners would be surprised at the great wealth of trees and shrubs already preparing for seed time and harvest.

Many of the most precocious flowers are to be found amongst the Rosaceae and the genus Prunus is pre-eminent in this respect, indeed, to my mind, the most glorious shrub in flower at the present time in the whole collection is the beautiful Prunus cerasifera var. Blireiana, a form of the Cherry Plum or Myrobalan. Each bloom measures quite one-and-a-half inch across and it is of the most delightful clear pink colour and almost semi-double. It is of a much richer tone than the Almond, which ranks amongt the most glorious of the early spring-flowering trees, and although this variety of Cherry Plum is quite bare of foliage the shoots bearing the blossoms are very picturesque and would be greatly prized as floral decoration in vases indoors. It seems almost impossible that such a beautiful flowered form should have been derived from the type, which has small white flowers that look something like those of the White Thorn, but a little bigger. The best specimen of Prunus cerasifera is a very big tree, smothered in flower buds and expanded blossoms. Growing in company with the type and the variety named is another form known as atropurpurea, and both Blireiana and' atropurpurea have dark purple foliage. The last is better known in gardens as Prunus Pissardii and is said to have originated in Persia; it is one of the most commonly grown trees for its striking foliage in summer.

Some of the species of Prunus appear to be very closely related, for Prunus cerasifera var. atropurpurea has blossoms that appear to be identical with those of Prunus Mumé, although, when placed side by side, those of atropurpurea are a little more cup-shaped. Both are semi-double and of a delicate rose-pink colour, something like Peach blossom.

The true Prunus Amygdalus has big, open, white flowers not a bit like those of the Almonds of gardens, that is, assuming the Kew tree labelled P. Amygdalus is the type. This is indeed a glorious tree, and it is a pity that this white-flowered Almond is neglected for the rosy-coloured one. In these white forms, such as in P. cerasifera var. atropurpurea, the buds are pinky, and with the young, bronzy-red foliage that is just appearing the tree has a very warm tone.

One of the most precocious of the trees is a specimen of Prunus Padus variety, growing near the Temperate House, which is nearly in full leaf, and at a little distance looks like a Willow sending out its young growths. It would be interesting to know if this special tree is always so forward at this season, for the young shoots look very tender, and I fear that severe frost would suffice to blacken them. A comparatively new species, P. Conradinae, is well furnished with its white, half-opened flowers, which have a ruby-coloured calyx and stalk. This plant was sent home by Mr. E. H. Wilson, who found it on March 14, 1900, in cultivation at Ichang, China.

Another interesting family of shrubs in flower at the present time is Hamamelis, of which H. japonica var. Zuccariniana is the best and described by Bean as one of the most beautiful of early, spring-flowering shrubs. The flowers are set in a ruby-red cup, which forms the calyx, but the narrow, strap-shaped, pale lemon-yellow petals are the most conspicuous parts. In the type the petals are a deeper yellow; both are slightly scented. Hamamelis aurea is very near to H. j. var. Zuccariniana, but the strap-shaped segments are of a paler shade and these also arise from a ruby-coloured cup. H. virginiana is not nearly so conspicuous, the flowers being of a greenish-yellow shade.

A very fine specimen of Nuttalia cerasiformis, the American Oso Berry (Fig. 57) is covered with flowers. Nearly all the shoots are bearing their complement of short racemes of white flowers, as shown so well in the illustration. This shrub is deciduous but it is already well furnished with new foliage, the leaves being narrow, oblong, or lance-shaped, and two inches to three-and-a-half inches long. The flowers are Almond-scented and as Bean, in *Trees and Shrubs Hardy in the British Isles*, states that the blossoms are usually fully open by the third week in March, the flowering this season must be unusually early. This shrub is interesting in the fact that male and female flowers usually occur on different plants and sometimes they are hermaphrodite as in the one enlarged in Fig. 57. When bushes of the different sexes are planted near each other the female specimens will set fruits in abundance.

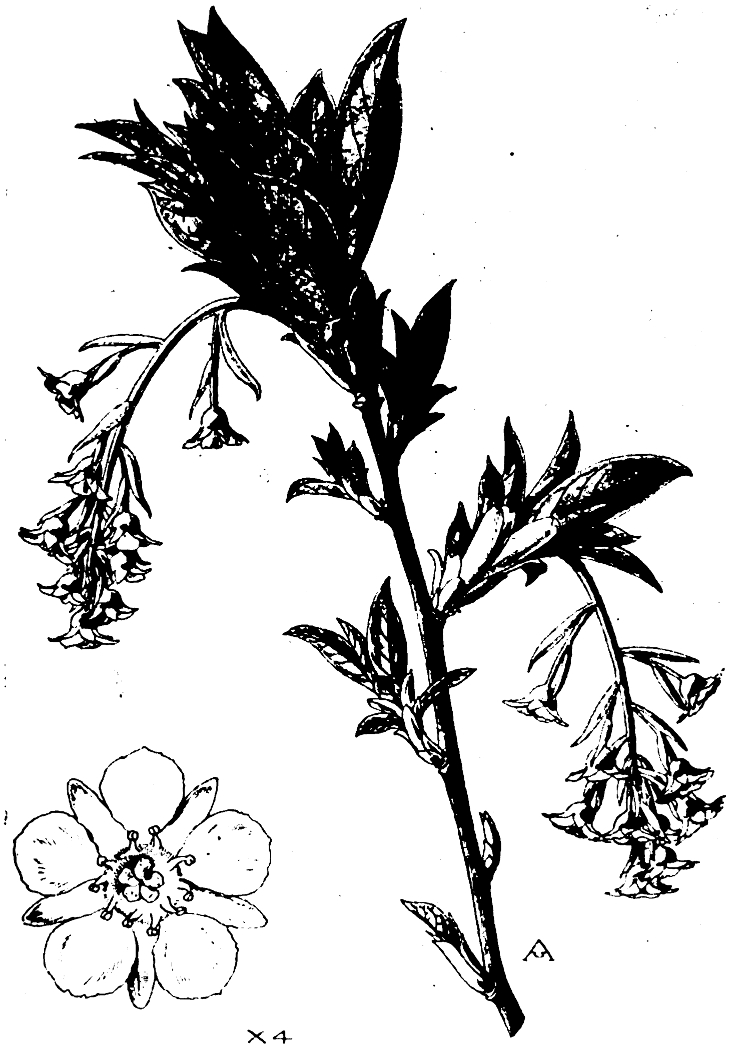

FIG. 57.—NUTTALIA CERASIFORMIS: WITH HERMAPHRODITE FLOWER × 4

In a warm corner near the wall of the Temperate House a plant of Raphiolepis Delacouri is in bloom; this plant is said to be a variety or hybrid of R. japonica, but in R. japonica the flowers are white, whereas in R. Delacouri they are as pink as those of an Escallonia. The blossoms are produced in short, terminal racemes and as the tree is evergreen it seems to be well worth planting in favoured districts. The leaves are ovate-lanceolate, very dark green in colour and the plant may be aptly likened to a small bush of Bay Laurel. Growing also in a sheltered corner under the wall of the Temperate House is a plant of Azara Browniae in flower. The blossoms, which are bright yellow, seem very shy in exposing themselves, for it is only on lifting up the sprays that their full beauty is revealed. The attractive part is the filaments which are a very fine shade of yellow. The foliage is about one-and-a-half inch long, one inch wide, very dark green above, but pale green below.

By the time these notes appear in print a fine bush of Parrotia Jacquemontiana will be a most beautiful sight, for on the day of my visit, February 19, the fat flower buds were just on the point of bursting, revealing the golden anthers that are apparently indefinite in numbers. The Kew bush is a very shapely specimen and covered with flower buds. *T.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street. Covent Garden. W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

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NOMOCHARIS.

NOMOCHARIS was the name bestowed by Franchet, the botanist, in 1889 on an unknown plant Delavay had found six years previously in the mountains about Tali in Yunnan—a prolific source of plants new to science. In endeavouring to place the plant in an existing genus, Franchet found himself leaning first to Lilium and then to Fritillaria; but there were characters about the new plant which were not found in either genus, and to cut a long story short, Franchet founded a new family to accommodate the novel characters and gave it the euphonius name which may be rendered "Beauty of the pastures."

At that time the new race was monotypic, that is to say, the plant of which Delavay's dried specimens lay on Franchet's herbarium table, and from which he prepared his description of both genus and species, was the only one known to western science. The particular plant was Nomocharis pardanthina, a species with which those interested in the genus have since grown familiar, and no one who knows it would question the wisdom of Franchet's creation of a new family specially for this treasure.

Botanists are said to possess the power of recreating dried specimens—of bringing life back, as it were, to the withered stems, browned leaves, and crumpled petals, which mean so much to science and so little to ordinary mortals—and when Franchet wrote of the new plant as "cette charmante Liliacée" he judged well, for those who have seen it realise its arresting, elegant beauty. To see "this ornament of the pastures of Mount Koua-la-po, where it grows among herbs after the fashion of the Lily" (Fig. 58) must be a great moment in the life of any plant lover, as great as when he comes suddenly on thousands of Pyrola in full flower in a Norfolk marsh, or on a New Forest clearing so thickly sheeted with Orchis maculata that he can hardly walk without crushing them.

No plant lover can fail to share Farrer's delight at his first sight of Nomocharis on the Hpimaw Pass:—"But the glory of these days I have kept to the last. For now, and shortly, is the heyday of Nomocharis pardanthina. And the first sight of Nomocharis pardanthina happy and at home marks as much an epoch in the gardener's life as does that of Primula spectabilis, Daphne petraea, Meconopsis quintuplinervia or Gentiana Farreri. . . . . . How shall I describe it, for the benefit of those who have only seen its lovely flowers drooping lonely in a pot at a show? It is most like some hybrid of a minor Lily with Odontoglossum Rossii, combining the perverse and sinister spottings of the one with the frank and graceful loveliness of the other, alike in proud, meek port and delicacy of shell-pink colouring. And when you see it on the high Alpine grass-slopes of Hpimaw Pass, nodding down at you with myriads of wide-open, dark-eyed faces, in every shade of pale rose and every degree of freckling, there is nothing very much left for you to look at on Hpimaw Pass. All over the open slopes it incredibly abounds among the grass, and even descends into light cane-brakes and little dells on the fringes of the wood, seeding with such profusion and growing with such hearty goodwill that though for some four thousand years (or thereabouts) the Chinese have sedulously devoured its bulbs like Onions, and so continue to devour them, you could never believe the smallest difference had been made to the unbroken profusion of its drifted masses. Such is Nomocharis pardanthina at home, and such, no doubt, are the other recorded Nomocharis. For all of them I forecast a happy future on well-drained, grassy banks in English gardens or wild gardens; but I find it very hard to believe that any one of them will surpass N. pardanthina, the longest known and widest spread of all. Scent is the only charm it lacks, but has all others so abundantly that this one lack is never noticed."

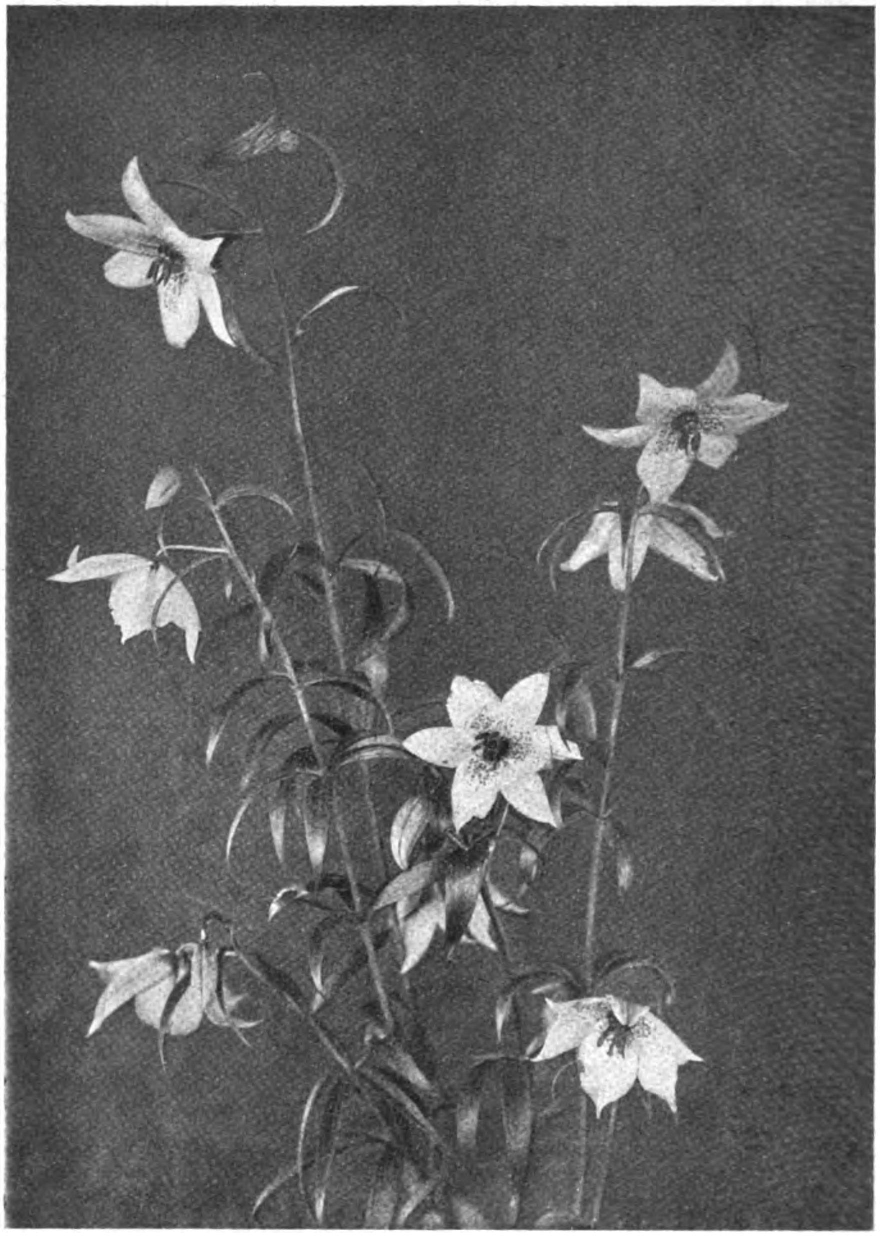

FIG. 58.—NOMOCHARIS PARDANTHINA.

Photographed by the late Mr. Reginald Farrer in its native habitat.

The characters which influenced Franchet in his creation of the new family are only of interest to botanists; but shortly, they concern the Pear-shaped base from which the needle-like, anther-carrying filaments spring, the *foveolae*, or pits, in the flesh of the three petals—not the sepals—low down on each side of the central rib, the curiously fringed edges of the petals and the open, flat shape of the flower, recalling that of Narcissus poeticus and Meconopsis. It is the last two characters which, to the untrained eye, distinguish the plant at once. Minor, and in the writer's experience, doubtful points are the presence and absence of purple spots on the petals and sepals respectively, and the difference in the shape of petals and sepals. The markings are not a constant character, for they vary in different plants and in some are more noticeable on petals than sepals; in others the whole flower is freckled with claret spots, after the fashion of Odontoglossum crispum, to which Bayley Balfour has compared it.

Before he died, Franchet had added a second species—N. meleagrina—to his erstwhile monotypic genus, the plant having been sent to Paris by Soulié, who gathered it on Mt. Sela, on the banks of the Mekong river. A third—N. Mairei—was added in 1913 by Léveillé from specimens collected by Maire in N. E. Yunnan; but neither of these two seems to have been cultivated. Then Forrest's work began to tell, and in 1914 a species of his finding flowered at the Edinburgh Botanic Garden, and was named N. leucantha. The lovely flower, larger in all its parts than N. pardanthina, is white, profusely freckled with maroon spots, which at the heart merge into a cloud of the same tint. Altogether, though the petal background is white, the flower is so richly coloured as to make one wonder if the specific name (leucantha—white-flowered) is any more appropriate than Farrer's "Marble Martagon" is for the Lily called after him —L. Duchartrei var. Farreri—for in cultivation, that plant often has almost as much maroon about it as white. But Forrest's field notes provide the explanation, for on them he wrote the plant down as satiny-white or watery-white, both with and without markings. He had collected the plant in 1906 and again in 1910, on the margins of Pine forests, on the eastern flank of the Tali Range at 11,000 feet to 13,000 feet.

Almost at the same time, another Forrestian Nomocharis flowered simultaneously at Edinburgh and in the writer's garden, and this proved to be the species on which Franchet had founded the genus—N. pardanthina. The plant had been raised from seed generously shared by Messrs. Bees with the Edinburgh Botanic Garden and the writer. An Edinburgh specimen was shown at Vincent Square on June 6, 1916, and naturally created much interest on the occasion of its first public appearance.

The four species referred to represent all the members of this family which have so far been brought within the limits laid down by Franchet with the material available to him twenty-five years ago, but in the light of his examination of the genus Fritillaria and the genus Nomocharis, Bayley Balfour, the monographer of the latter genus, evidently felt the need for some revision of the position of outlying members of both the Lily and Fritillary families; and in pursuance of his views, suggested a broadening of the generic basis of Nomocharis. His investigations led the learned botanist to the conclusion that the only definite character peculiar to all the then known Nomocharis (1918) was the rounded summit to the Pear-shaped base of the stamens, which Franchet termed "the hollow, inflated lower part of staminal filaments," and Farrer, less burdened by the need for scientific precision, aptly called "the curious tubercular swelling at the base of the stamens." Balfour showed that the swelling was not hollow, for it contains the vascular bundle and cellular tissue. He also found that other characters relied on by Franchet were not peculiar to Nomocharis, but were shared by some Lilies and some Fritillaries. He therefore proposed for Nomocharis a revision and widening of Franchet's generic characters which brought in Fritillaria flavida, F. lophophora, F. Stracheyi, as well as Nomocharis Wardii—a new Wardian species—F. K. Ward's species No. 758 and Lilium oxypetalum. These he grouped in the genus as *Oxypetala*, the principal characters being a small bulb with narrow, non-converging scale bulbs, a stem not rooting over the bulb, a funnel-shaped or concave perianth and stamen filaments noticeably less swollen at the base than in Franchet's type plant.

Into a second series he proposed to call *Eunocharis*, Balfour grouped Franchet's original type (N. pardanthina), as well as N. leucantha, N. Mairei and N. meleagrina. In this group the bulbs are larger than in the first group and have few fleshy scales; the stem has roots over the bulb; the perianth is open and often flat, the segments are usually dissimilar, and the staminal filaments much inflated.

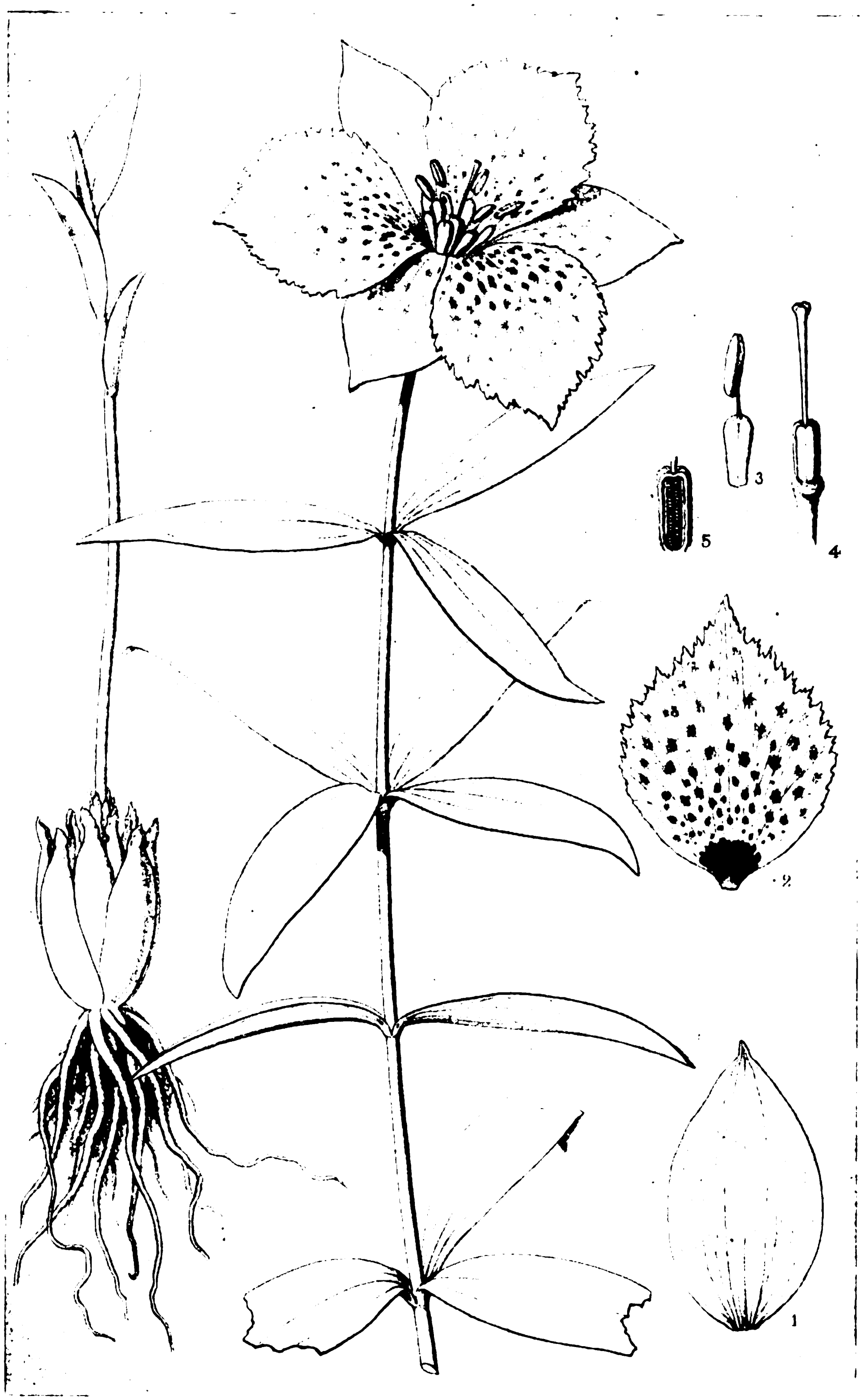

FIG. 59.—NOMOCHARIS PARDANTHINA, FRANCHET.
(Reproduced from the *Journal de Botanique*, 1889.)
1, Sepal; 2, Petal; 3 Stamen; 4, Pistil; 5, Ovary.

The third series, called *Ecristata*, takes in N. Forrestii (Forrest's No. 10,620; 1912), N. saluensis (Forrest's No. 493; 1904), and N. tricolor (F. K. Ward's No. 801; 1913), all of which Bayley Balfour created. In these plants the bulb is still larger, with many fleshy scales, the stem again has roots above the bulb, the perianth is even less open and the staminal filaments are only slightly inflated.

It remains to be seen whether the proposed revision will hold for the considerable amount of new Farrerian, Forrestian, and Wardian material which has accumulated since 1918, when Bayley Balfour proposed his tentative enumeration; but the suggested rearrangement is convenient, and seems to offer a reasonable solution of difficulties which have faced students of Lilium, Fritillaria, and Nomocharis. It also seems to offer a satisfactory resting place for the Himalayan plant Royle * named Fritillaria oxypetala, which has since been bandied about by one botanist and another. In 1875 † Baker renamed it Lilium oxypetalum and later, Elwes ‡ followed his example. In 1892 § Sir Joseph Hooker placed the plant back among Fritillaria.

One of the main difficulties of students in the consideration of the Himalayan and Western Chinese Fritillaries which Balfour proposed to shepherd into the Nomocharis fold has been the shape of the bulb. It is elongated, with more or less ovate-lanceolate pointed scales, very different in shape from the short, somewhat globose bulb with rounded, tuberous scales, of typical Fritillary, of which several, such as F. cirrhosa, F. decussata and F. Delavayi are found in Western China. It takes more the form of the bulb of Lilium polyphyllum, L. tenuifolium and L. cernuum, and if bulb character is an important point, the three Lilies in question, and L. Thomsonianum as well, tend to show that Lilium and Nomocharis are closer to each other than either is to Fritillaria.

As yet, the outdoor cultivation of Nomocharis in this country has proved singularly difficult, and so far as the writer is aware, it cannot at present be said to be perennial in any garden. This is not for want of trying, for many thousands of seedlings must have been raised from seeds sent home by Farrer, Ward, and particularly Forrest. On the other hand, there seems no particular difficulty in cultivating Nomocharis in pots under glass and without heat. The failure of the genus in the garden may be due, in some measure, to the difficulty of keeping the bulbs reasonably dry when they are dormant, for that is the cultivator's prime difficulty with Lilium polyphyllum, a species amenable enough under cover but more troublesome in the open. Some day the secret of the outdoor cultivation of Nomocharis will doubtless be discovered, either by consistent experiment, or, as often happens, fortuitously.

In an article on the propagation of Nomocharis || the chief propagator at the Edinburgh Botanic Garden recently drew attention to what may be called the burrowing habits of Nomocharis. The writer is able to confirm Mr. Stewart's interesting observations, for when many years ago, Professor Bayley Balfour kindly shared with him Forrest's original sending of the seeds of Nomocharis, the seeds seemed to have come to nothing until, on turning out the pan in which they had been sown, and which happened to be eight inches deep, a swarm of seedlings was found on the floor of the pan, in among the drainage. As the seeds were sown half-an-inch under the surface the bulbs had travelled nearly seven inches down.

In the practical cultivation of the genus in this country, planting at eight inches or nine inches below the surface does not seem to be of any avail, but this may be because the temperature of the ground at that depth in England is not sufficiently high. Many plants which habitually go some way down in the country of their origin do not necessarily flourish, or even grow, here when planted at a similar depth. The wild Lilium polyphyllum, for instance, is commonly found nine inches or ten inches deep, in leaf-mould, but one might as well throw the bulbs away as plant them in that fashion in this country. Again, in the Transvaal, the corms of Moraea spathacea are sometimes found deep down, but here they grow best at about four inches under the surface. No doubt a series of dry summers, such as we had in the 'nineties, might profoundly modify our conception of the cultivation of many plants, but so long as our climate remains what it has been for about twenty-five years, it seems waste of time slavishly to follow Nature's ways in the garden.

Fig. 59, which is a photographic reproduction of the plate illustrating Franchet's description of the genus and species*, clearly shows the characters to which he attached importance;—the dissimilar sepals (1) and petals (2), the needle-like filaments springing from the swollen, Pear-shaped base (3), and the pits on the frilled petals (2). *A. Grove.*

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* *Illus. Bot. Himal.*, i. (1839), 388.

† *Journ. Linn. Soc.*, xiv. (1875), 234.

‡ *Monogr. Lil.* (1880), t. 5.

§ *Fl. Brit. Ind.*, vi. (1892), 352.

|| *The Garden.* Jan. 3, 1925, p. 8.

* *Journ. de Bot.*, 1889, vol. 3, p. 114.

JUDGES AND DISQUALIFICATIONS.

The subject of judging, or making the awards to exhibits at shows of garden produce is of perennial interest and not the least interesting, and undoubtedly one of the most important, aspects of it is that of disqualifications. The success of a show may, indeed does, depend in material measure on the decisions of the appointed adjudicators, and organisers are so far alive to the fact that they spare no endeavours to secure the services of men of sound knowledge and, of course, unimpeachable honesty. Exhibitors, too, are eager to have men of repute inspect their exhibits and would rather that they should come from a distance than from close at home.

In regard to the selection of judges the common fault committed by authorities is rigid adherence to the same men year after year, notwithstanding that some of them may be so far physically, if not mentally, enfeebled as to be obviously unequal to the strain of a task which may vary in its demands, but can never be easy. Youth must be served, and when considering the appointment of judges, organisers of shows are wise who bear this in mind and leaven the experience of the veterans with the alertness of body and mind of the younger generation. The young gardeners of to-day have been hit hard in the pages of *The Gardeners' Chronicle* within the past few months by men who seem to have forgotten that they themselves were hit just as hard by the generation which preceded them. Age has always condemned youth as decadent, and probably always will do, but it is the gloomy pessimist alone who would have the world believe that it does not wag as strongly as it did in the days of Wellington and Nelson. British gardening is as safe in the hands of the men from twenty to forty years of age as it was those same and more years ago. This, however, is a digression, excuse for which is sought on the ground that age should seek to assist youth by training it in the important work of judging, as it has done before in other phases of our most ancient and most honourable craft.

Precisely as judges are presumed to cast odium upon an exhibitor when they inscribe the word "disqualified" on the back of his class card, so also do they bring odium upon themselves. Judges, exhibitors, and organisers of shows abhor the word, and the last-named are prone to emphasise their abhorrence by removing from their lists the names of judges whose duties compel them to use it. This is grossly unfair, because a judge has no power to disqualify except for direct transgression of the laws of the society for which he is acting. Our magistrates, county court and high court judges would infinitely rather find the man arraigned before them innocent than guilty, but when the guilt is proved they do not hesitate to do their duty, which is to condemn. Our flower shows are courts, and it is the duty of the judges to pass sentences, favourable if possible, unfavourable, if necessary. The way of the transgressor should not be made harder; nor should it be made easier, as it will be when encouragement is given by judges who fail to carry out an unpleasant duty.

It is, perhaps, unfortunate that judges of horticultural produce have no clearly defined standards to guide them. It is true that the Royal Horticultural Society has produced a most admirable series of *Rules for Judging* which is subscribed to by all the leading judges, old and young, in the country, but these are not helpful on the subject of disqualifications, rather the contrary.

For example, we read on different pages that (1) "Judges have no power to correct the mistake of an exhibitor," (2) " . . . . one item more, or one less, disqualifies," and (3) "in the case of a schedule the judges are bound to adhere to the printed words"; all of which is so far definite as to prove that although the judges play the part of disqualifiers, it is the exhibitor who disqualifies himself, when he makes an error under the laws by which he agrees to abide when he makes his entry. The R.H.S. does not, however, stop here, and it is in its further consideration of the subject that it places the judges in an invidious, if it is not in an untenable, position.

Keep clearly in mind the dicta set forth above and endeavour to reconcile them with "Judges . . . may point out . . . slight departures from the exact terms of the schedule, which, *in their opinion*, are the result of an accident, and are merely technical, not substantially affecting the character or merit of the exhibit . . . ." Proceeding it is stated that an official may "with the sanction of the judges, not otherwise," permit the correction to be made or make it himself (the italics are the writer's). Horticultural judges are, therefore, to assume the position of law judges and decide upon the honesty of an exhibitor who is unknown to them. They have no power to correct an error, yet they may (not must) call attention to it and later give absolute sanction to the correction being made by other individuals who are elsewhere exhorted in the same book "to see that all exhibits are in accordance with the conditions of their schedule before they are submitted to the judges." This definitely places the onus of disqualifying on the officials, who are urged in still another paragraph to "adhere strictly and exactly to all . . . . . notices publicly given," i.e., all statements printed and published in the schedule and elsewhere.

It is impossible for judges to assume so many roles—their duty is to adjudicate upon the merits of the exhibits before them and to see that they conform absolutely to the class specifications printed in the schedule. When they find an exhibit which does not conform to those words it is not for them to inquire among themselves whether the irregularity is due to "accident" or "intention to deceive or mislead," but to write the word "Disqualified," or, if it is considered desirable to soften the blow, the words "not according to schedule," on the back of the defaulting exhibitor's card. It is maintained that in fairness to themselves and other exhibitors there is no alternative course.

This brings me to another point, that, if memory plays no trick, has not been discussed recently in *The Gardeners' Chronicle* and which is of considerable importance. It can be put best in the form of a question —Should judges supplement the condemnatory "Disqualified" with the reason or reasons? (The words "not according to schedule" convey their own reason). There is an old saying which runs, "the judge should give his decision, but not his reason" on the ground, presumably, that while his decision cannot be questioned his reasons for reaching it are arguable. The position of judges at flower shows is that they have to decide upon the merits of the exhibits and accept responsibility for those to which honours are awarded being in conformity to the words of the schedule. When the objectionable word "Disqualified" must be endorsed on a card the reason why that has been done might desirably follow, with the initials of the judges, because it may tend to soften the blow in degree at the same time as it teaches the exhibitor and the visiting public exactly what has brought the disqualification about.

There are several other points that could be raised, but one only shall be considered, because its influence is general in so far as it concerns officials, exhibitors and judges, all of whom it affects seriously and often. It is usually stated in the schedule that judging will commence at a specified time, when all exhibitors must leave, and that the exhibition will be open to the public at a specified hour later; this intimation is printed also in advertisements published with a view to attracting a good attendance. Faith must be kept with the public, which provides a proportion of the cost of the show. People who present tickets bought previously or who proffer cash at the entrance at the advertised time expect to be welcomed; if, instead, they are told that they must wait, it is not to be wondered at if they take umbrage and refuse to have anything to do with the show in future. Officials who are afraid of giving offence if they insist on exhibitors leaving at the specified time, and are, nevertheless, perfectly sure that the public must not be denied, have no alternative other than to penalise the judges by reducing the time during which their work must be accomplished. At no show is too much time allowed for judging when the many difficulties of the task are taken into consideration and in no circumstances should the allotted time be curtailed. If judges are not permitted to start punctually they must not be blamed for inevitable errors. Horticultural judges are human beings; their duties demand attention to so many little as well as big things that hustling them is tantamount to putting a premium on those errors which lead to disappointment always, to irritation often, and to unseemly arguments sometimes. In fairness to exhibitors, public and judges, officials are most strongly urged to adopt the recommendation of the Royal Horticultural Society that "Judging should commence *punctually* at the time appointed and the rule fixing the time for the conclusion of staging should be *strictly enforced*." *Scrutator.*

POTATO BREEDING.

(*Concluded from page 133*).

A study of the following tables will enable the reader to realise that in order to have the greatest chances of securing a good seedling, an attempt must be made to avoid utilising parents showing faulty characters which dominate in the offspring, otherwise the probabilities of obtaining desirable combinations are remote. On the other hand, faulty characters, if not dominant, may be disregarded to some extent if the parents possess good qualities. Thus, objection need not be taken to round tubers, deep eyes, susceptibility to Wart disease, or early maturity in one parent.

A recent paper[*] discusses the tuber pattern of King Edward—a very desirable type because of the ease in identification—and arrives at the conclusion that it may be assumed that the parti-coloured pattern depends on a definite factor and it exists in the variety in a heterozygous condition and that, if it could be obtained in a homozygous state, it would breed true. Further, it would behave as a dominant to the recessive white state and be recessive to full colour.

It is not possible to obtain amongst present commercial varieties, parents possessing all the virtues or, indeed, many virtues in a combined state, but it is to be remarked that the breeder is by no means limited in his selection of parents to ordinary varieties; he may and should utilise meritorious seedlings for crossing with one another or with standard varieties.

With regard to diseases other than those mentioned, it is interesting to note that one variety, Jubel (Richter) has been found to be immune from the attacks of ordinary scab.[†] Experience has shown that it is difficult to breed for early varieties. Earlies do not generally produce fertile pollen, and are not readily intercrossed. However, the mating of two second earlies, or an early with a second early, provides material for the selection of early types.

TECHNIQUE OF CROSSING.

The actual method of procedure depends on the parents selected and may be discussed as follows:—

(1) *When the Female Parent does not set berries naturally.*—The best time for cross-pollination is when the flower is ripe, *i.e.*, the stigma sticky and receptive; this generally occurs about two days after the flower has opened, and while this condition exists, the petals are not usually reflexed as in immature flowers. In order to secure pollen an anther should be taken from the male parent when it shows an open pore at the apex, *i.e.*, when it is mature and ready to discharge. The pollen may be gathered on the point of a pocket knife by running it up one side of the inner face of the anther towards the pore referred to above. The pollen should then be transferred to the stigma. Towards evening on a quiet day free from rain affords the best conditions for the operation. Considerable assistance is afforded the Potato breeder by the fact that if the anthers are pulled the pollen in them will retain its vitality for several days provided it is suitably stored.

TABLE I.

Parent Characters	Apparent Behaviour of offspring (Dominating)
Immune—Immune (Wart Disease)	Immune
Susceptible—Susceptible (Wart Disease)	Susceptible
Immune—Susceptible (Wart Disease)	Equal proportions (varies with variety)
Soft Flesh—Hard flesh	Soft flesh
White Skin—White skin	White skin
Yellow—White flesh	Yellow flesh
Early—Late	Late

TABLE II.[*]
According to Salaman.[†]

Parent Characters	Apparent Behaviour of offspring (Dominating)
Deep—Shallow Eyes	Shallow
Purple—Red Skin	Purple
Pollen—absence of pollen	Absence of Pollen
Long—round tuber	Long
Susceptible—Susceptible (Wart Disease)	Susceptible
Immune—Immune (Wart Disease)	Immune
Immune—Susceptible (Wart Disease)	Varying

TABLE III.[‡]
According to East.

Parent Characters	Apparent Behaviour of offspring (Dominating)
Purple—White flowers	Purple
Purple—Other skin	Purple
Red—White skin	Red
Shallow—Deep eyes	Shallow

[*] A lecture on the Hereditary Characters in the Potato.—*Journ. Hort. Soc.*, 1912 to 1913.
[†] Fruwirth, C. *Handbuch der landwirtschaftlichen Pflanzenzüchtung*, 1922.
[‡] *Journal of Genetics*, 1, 1910.

2. *Where the Female Parent forms Natural Berries.*——The procedure here is the same as the above, except that the anthers of the female parent must be removed from the opening bud before the pore has developed at the apex of the anther. Great care must be taken during this process to avoid injury. It is not considered necessary in this country to protect flowers from natural cross fertilisation. However, if the breeder desires to make absolutely certain of freedom of foreign pollen, protection may be afforded by means of bags.

3. *The Fertilisation of Varieties which seldom Flower.*—Many of our best varieties bloom very rarely. Various devices, however, can be utilised to induce a freer formation of flowers. The partial severing of the stems is frequently sufficient. In the same way, the prevention of tuber formation creates a tendency in this plant to develop floral parts. The use of "bolters" for crossing—because of their more frequent flowers, has been advocated, but so little is known at present regarding these that the breeder would be advised to resort to this method only when others have failed. Recently, Bornemann[*] has advocated the increase of carbon dioxide in the atmosphere surrounding the plant in order to produce flowers.

Diseases are not generally heritable through the true seed. Nevertheless, it has been suggested[†] that rare cases of transmission of Leaf-roll by this means is effected. Diseased plants, therefore, should be avoided.

TREATMENT OF SEEDS AND SEEDLINGS.

The flowers which have been fertilised should be marked, and the resultant berries allowed to remain on the plant so long as possible. However, they should be gathered before there is any danger of them falling. Seeds should be expressed from the berries on to paper several weeks after harvesting.

The seeds may be sown under glass in a good, sandy mould, preferably in boxes. When the young plants are sufficiently well grown, say four inches high, they may be transplanted into pots, and subsequently, in the open, early in June. However, before the final transplanting takes place, the young plants should be hardened by being placed outside for varying periods during the day. The seedlings may be grown in drills made twenty-seven inches apart allowing eighteen inches to two feet between the plants.

VIRUS DISEASES IN THE SEEDING STAGE.

At present some breeders grow seedlings under cages in order to avoid infection by the above troubles, which are transmitted to the Potato by aphides and other insects. There is, of course, no objection to this or to the growing of seedlings in the open at high altitudes or in places where there is no danger of infection. Indeed, at present these would seem to be the only methods of raising stocks free from foliage diseases. However, in the opinion of the writer, exposure to infection is not necessarily a fault in breeding, especially if the breeder desires to produce varieties which are highly resistant to these degenerating diseases. Varieties differ in their susceptibility, although resistance appears to be specific for each disease rather than general. There is no doubt, however, that the degree of resistance can be intensified by breeding, and possibly immune varieties evolved. A seedling variety has been observed for four years to possess such a measure of unpalatability for aphides that these creatures have avoided it almost entirely, and it remained free from virus diseases while all other neighbouring varieties became affected. Therefore, if seedlings are not actually grown in an infectious plot, or if they are "caged" tests should be made in subsequent years to ascertain the degree of susceptibility.

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[*] E. J. Collins, "Inheritance of the Colour Pattern of King Edward Potato." *Journal of Genetics*, Vol. 14, No. 2.

[†] Gisevius, Prof. Dr. *Erganzungsliste der Kartoffel sorten*, 1921.

[*] Bornemann. *Kohlensäure und Pflanzenwachstum*, 1920.

[†] Murphy, P., and McKay, R. "Investigations on the Leaf Roll and Mosaic Diseases of the Potato, February, 1924. *Journal, Department of Agriculture and" Technical Instruction*, Irish Free State.

Discarding Seedlings.

Discarding may begin at any moment when undesirable features manifest themselves. Notes on the foliage, maturity, and incidence of diseases should be made during the first growing season, while at lifting special attention should be given to the length of runners. The yield during the first year, especially if early varieties are sought, is of minor value, as also is the number of tubers to the plant. Each year the seedlings should be grown in their maturity groups and tested against standard varieties, further discarding being made by the application of the principles already discussed. It should always be kept in view that although a perfect Potato, combining all the virtues and possessing no faults, may never be raised, any advance on the merits of existing varieties is in itself a great achievement. *Thomas P. McIntosh, B.Sc. (Agric.), Edinburgh*

VEGETABLE GARDEN.

SPINACH.

(Spinacia oleracea L.)

The Spinach is one of the most fortunate members of the vegetable kingdom, for while it is unattractive in leaf or flower it has hosts of friends, and practically no enemies, in every part of the civilised world. The reason of this is not far to seek, for from the date of its first introduction in 1568 its virtues have been known and appreciated by suffering humanity. A great cleanser—in southern France it is known as "the besom of the stomach"—it does good by stealth in the manner indicated, while the best authorities affirm that it is impregnated with iron, which imparts tone and strength to the eater. Its nutritive qualities do not rank very high. There are two types of Spinach, the Prickly-seeded and the Round-seeded, and Vilmorin's *Vegetable Garden* states: "It is the opinion of botanists that these are two distinct species." Miller's *Dictionary*, seventh edition, 1759. quotes from Tournefort's *Institutions of Botany*, 1716, as follows:—"Spinacia vulgaris capsula semina aculeatis. Common Spinach with prickly capsules; and Spinacia vulgaris capsula non echinata, Common Spinach with seed vessels not prickly." Elsewhere Miller names the Round-seeded species Spinacia glabra, which is the name generally accepted at the present day. According to Miller, there were several different varieties of each species in existence in his day. There is no doubt that the Prickly-seeded was the first Spinach introduced. We are not told where it came from beyond a reference to the Orient; the inference being that it originated somewhere on the far eastern shores of the Mediterranean. This is a very fair inference, seeing that the plant is invariably at its best when growing near the sea. Captain Burnet Landreth, a very eminent seed grower at Bloomsdale, U.S.A., who had on several occasions visited the principal seed-growing centres in Europe, told the writer that the best Spinach seed produced in the northern hemisphere was grown in our own Isle of Thanet. This opinion the writer is able to fully confirm from mature experience.

The oldest illustration of the Spinach plant that has come under the notice of the writer is a woodcut of a fruiting plant of the Prickly variety, as it is known to-day, which adorns the *Herbal* of Dodonaeus. The Spinach being a dioecious plant, bearing what are botanically termed male and female flowers on separate plants, it is interesting to note how it was viewed by Lyte the translator. "Spinach hath a longe leafe, sharpe pointed, of a brownish or greene color, soft, gentle, full of sap, and deeply cut with large slits upon both sides about the largest or nether ende of the leafe; the stalke is round and hollow within; some of the plants have flowers clustering or thick set alongstt the stalks, and some bring forth seeds without floures, in thick heaps or clusters full and plenteous, and for the most part prickly. It is sowen in gardens amongst pot herbe. This pot herb, or rather sallet-herb, is called of the new writers Spinachia, in English, Spinach. Spinach is cold and moist of complexion, doth loose the belly, and the broth of the same is of like virtue . . . . laid unto hot swellings it taketh away the heat and dissolveth the swelling." Only one variety (the Prickly) is mentioned by Dodonaeus, and respecting the name given to the plant he states: "Fuchius named it in Greek, Spinachia." As Fuchius had only seen the spined or Prickly-seeded variety, he certainly gave it a very appropriate name. As many readers may remember, Leonard Fuchs (Fuchius) was the eminent Batavian botanist and Physician in honour of whom Father Charles Plumier, in his *New Genera of American Plants*, 1713, named the beautiful scarlet Fuchsia (Fuchsia triphylla coccinea), which he was the first to discover in America.

Careful search has failed to trace the date of introduction and the place of origin of the Round-seeded Spinach, but it must have been in existence prior to 1716, the year in which it was quoted by Tournefort. The entry was cited by Miller, and the plant described in the various editions of his *Dictionary*. Patrick Drummond, seed merchant, Edinburgh, quoted in his 1754 catalogue, the following varieties. viz.:—Round Dutch, Smooth French, Prickly and Mountain. As Mountain Spinach is one of the names applied to Orache (see below), we may omit it from the present list. As regards the smooth French Spinach the name is occasionally given to Orache, but as the French growers have raised some of the best and most popular varieties of Round-seeded Spinach, it may be that one of the earlier forms is described under this name. It would be a good descriptive name for the Viroflay. This brings the list down to the Prickly and the Round. Respecting these, Justice, who fully recognised the different qualities of the two sorts, states:—"The seeds of *the largest kinds* of the Spinage are smooth, whereby they are distinguished from the winter *Prickly small-leaved sort*. The best sorts are the Prickly for winter use and the broad-leaved for summer use." This advice seems to have been followed throughout western Europe for fully one hundred years, but since the middle of the nineteenth century French, British, Dutch, and German botanists and growers have vied with each other in developing new and improved forms, and the following list of present day varieties testifies to the success which has attended their efforts:—

Prickly-seeded varieties: Ordinary, with rather thin and narrow leaves; Round-leaved, a dwarf plant with rather small leaves of roundish shape, thicker than the first-named but not so hardy; Large-leaved Long-standing, the best for winter or spring sowing, producing an enormous crop of very large leaves; Munsterland, frost resisting, said to be the hardiest of all.

Round-seeded varieties: Bloomsdale or Norfolk Savoy (see below), for spring and summer sowings; Flanders, The Carter Victoria, and Lettuce-leaved; seeds for summer and autmn sowings, Victoria, Giant Thick, Crumpled-leaved, and Long Season, a distinct type, forming dense rosettes of small, thick, very dark leaves, and lasting until the end of the season.

The Bloomsdale or Norfolk Savoy variety has a somewhat interesting history. It was brought to its present state of perfection in Pennsylvania. The leaves are curled and wrinkled like those of a close-curled Savoy Cabbage, and the fully developed plant has the appearance of a loose, dark green ball. An immense acreage of it is grown every year round Norfolk, Virginia, from whence it is shipped during the winter, in barrels, to the northern markets. The distances are so great that a flat, smooth-leaved variety would become so battered and matted that it would lose much of its value, in addition to which many more leaves would be required to fill the barrels. By using the Savoy variety this difficulty is overcome. Its form reduces the quantity necessary to fill the barrel, which is an advantage to the grower, and at the same time minimises the damage inevitably suffered in transit, to the advantage of the purchaser.

It is also one of the hardiest varieties in cultivation. It was seen in fine form at the Wisley trials, but did not gain an award. For frame culture during the winter it is an ideal variety.

In addition to other good varieties of Spinach, which it is not necessary to name here, there are several plants which are used as substitutes. It is, however, necessary to remember that nothing can quite take the place of the genuine article.

ORACHE OR MOUNTAIN SPINACH.

(Atriplex hortensis, Linn.)

An annual plant, native of Tartary; growing about six feet high, with soft, broad leaves. The leaves are boiled and eaten like Spinach or Sorrel, and are often mixed with the first to modify the bitterness, and with the other to reduce the acidity. There are red, white and green varieties, but all possess the same qualities. The red colour boils out in cooking. The plant may be as easily grown as Spinach.

SPINACH BEET.

(Beta vulgaris Linn.)

The leaves of this plant, like those of all garden Beets, make a very acceptable substitute for the ordinary Spinach, and as the plant is very easily cultivated, and of a long-standing nature, it should be much more freely cultivated. So soon as one crop of leaves has been gathered the plant sends out a fresh crop, and, with suitable aids, such as a small greenhouse, may be kept growing throughout the autumn and winter. Both this and the Swiss Chard Beet are highly esteemed by the French and Italians.

NEW ZEALAND SPINACH.

(Tetragonia expansa.)

Although this is not a true Spinach it may be classed under the same heading, seeing that its uses are practically the same. An annual, native of New Zealand.

and introduced in 1772, the seeds—which are enclosed in hard-horned seed vessels—may be sown in a hot bed if plants are required early, or in the open ground when summer sets in. Provided there is a fair amount of rain and sun, an abundant supply of dark green, succulent leaves, without any of the objectionable features of the ordinary Spinach, is produced until the cold weather sets in. Given a fair start, in well prepared and fairly rich soil, it needs practically no other attention. *S. B. Dicks.*

FRUIT GARDEN.

THE FLAVOUR OF PEARS.

This subject (see p. 115, vol. LXXVII) is of much interest. My experience has been gained in gardens where Pears of high quality were in request. To obtain these fruits at their best a warm soil and warm situation are necessary. Frequently one finds large bush or pyramid Pear trees growing in the open garden, which seldom produce satisfactory fruits. In some cases the roots have entered a cold subsoil, in other instances they may be growing on unsuitable stocks.

I am convinced that double grafting is beneficial in the case of several varieties. I have removed bushes from the open garden and planted them against a warm wall with good results. Large pyramid trees have also been treated in the same manner.

By carefully removing some of the branches and training in sufficient shoots to form a fan-shaped specimen, quite shapely trees may be formed and the second season after their removal excellent fruits may be gathered from them. Trees which have previously made excessive growth, will, when treated in this way, form fruiting spurs in abundance and pruning will be reduced to a minimum.

The storage of Pears, especially late varieties, is a matter of considerable importance. Late Pears are sometimes gathered too early. Amongst the early Pears mentioned in the note referred to I was pleased to see Colmar d'Eté, a variety which seems to have dropped out of cultivation during late years, but one that may often be relied on to produce very delicious fruits, at a time when they are much appreciated. Pyramid trees of this variety in a Hertfordshire garden gave excellent fruits. *C. Ruse, The Hyde Gardens, near Luton.*

PRUNING AWKWARDLY SHAPED TREES,

For sheer awkwardness it would be difficult to equal Allington Pippin. The shoots are so long and slender that they have to be shortened, and the result is a forest of laterals every year. There is always a lot of work with Allington Pippin. Amongst Plums, River's Early Prolific is equally puzzling until old enough practically to look after itself. It insists on making strong growth from the top at the expense of the bottom of the tree; and nothing will prevent it from growing upwards and induce it to spread out more. Moreover, it has an awkward habit of forming laterals along strong shoots of the current season's growth, leaving no buds to cut to, consequently it is not easy to obtain a well-balanced tree.

Pruning is irksome only when there is a lot of diseased wood to remove. Czar Plums were bad this winter owing to the dead spurs and mummified fruits hanging on the trees as a result of brown rot.

I have just pruned a block of old trees of Cox's Orange Pippin Apple, which gave me lot of work owing to scabby and cankered shoots and diseased buds and spurs. Some of the largest trees took nearly an hour to prune, including some time spent in groping about on the ground to pick up the prunings, which, of course, must be burned. *Market Grower.*

CULTURAL MEMORANDA.

PROPAGATING VINES FROM EYES.

On p. 70 Mr. Streeter writes as if it is an easy matter to propagate vines from eyes and fruit them in eighteen months. Although he does not state precisely whether the hot-beds were indoors as usually made up for the growing of Melons, or those on the frame ground, either position would, I feel sure, be suitable.

There must be many gardeners who have had experience with vine culture in the manner he describes, and I am convinced that it is the most rational way to ensure success, but there are failures even when this mode of propagation is carried out to the letter.

Sometimes the eyes grow well, and healthily, white roots quickly penetrating through the pieces of turf. After it is potted the vine soon reaches the top wire and many feet of growth has to be pinched off.

In another season, with the same treatment, many of the buds merely grow out, and no roots form, while the shoots only make a yard or so of growth, and certainly do not form fruiting canes. Young vines that have made strong canes are cut down to five or six buds, turned out of their pots, the old soil shaken from their roots, and repotted in a smaller receptacle, to be started into growth in a genial temperature. When growth commences, the buds should be reduced to one, selecting the best; the budless piece of wood remains to act as a stake to which to tie the subsequent growth.

On the selection of buds or eyes, Mr. Streeters advice is to "secure well ripened shoots and cut out the strongest buds for propagating purposes." The question arises, which is the strongest bud? Many gardeners claim that those buds two or three away from the base of the spur are the best; certainly these are the first formed and have had a longer season to ripen, yet others further away from the base are larger and possibly not so firm. Anyhow, it is to be noted that the leaves in conjunction with basal buds are not nearly so large as those on others that follow and I ask is this of importance when the choice of buds for propagating purposes is considered? *C.*

HOME CORRESPONDENCE.

Heavy Rainfall at Mill Hill.—During the twenty-four hours ending six p.m. on Friday, the 13th inst., an inch-and-a-quarter of rain fell in these gardens. *James A. Paice, Sunnyfields Gardens, Mill Hill.*

Aphides.—Many persons noticed the remarkable absence of these insects during the past year, but no explanation of this immunity has been given; during the season from June to November I visited some hundreds of allotments and gardens in Surrey, Sussex, Staffordshire, N.E. Yorkshire, S.W. and S.E. London, and only in two or three instances were any aphides seen and the attacks were slight. This is the more remarkable when we remember the extremely bad infestation in 1923, which was certainly the worst I have ever seen, many plants being almost defoliated by this pest: strangely enough the aphides disappeared as if by magic after the severe thunderstorm of July 9. It is quite clear something killed them on that occasion, and we have not had them since; it was not the heavy deluge of rain, as many of the pests were underneath the leaves and well protected, so the question is what caused their disappearance so suddenly and effectually, and can it be reproduced artificially if we have another severe attack? *W. H. Divers, V.M.H., Westdean Hook, near Surbiton.*

Daphne Laureola.—The writer of the note on this species on p. 68 (Jan. 31, 1925) is quite in error in stating that the flowers are odourless; but he errs in good company, for Bentham and Hooker in their *Handbook of the British Flora* states that the flowers are "green and scentless," This is a double mistake, for the flowers are greenish-yellow and decidedly scented, though the scent is neither so strong nor so sickly as that of D. Mezereum. I have both species in my garden, so I think I may claim to know something about the matter. Nicholson's *Dictionary of Gardening* and Hooker's *Student's Flora* both state of the genus Daphne in general, "Flowers odorous," and neither makes an exception of the Spurge Laurel. Light is perhaps thrown on the conflicting statements by the remark in Prof. Boulger's edition of John's *Flowers of the Field*, viz., "in mild weather fragrant." My plant came from a very dark wood on a Surrey chalk hill, in which the plant is common, and it was planted in my garden in not particularly good soil under a Guelder Rose and a Spindle tree, so the conditions were by no means luxurious. It flowered several times and then got so leggy that I cut off the tops of all the branches and struck them separately in a pot. The cuttings are healthy but small at present and have not yet flowered in their several stations in the garden. By the way, the plant is, of course, neither a Spurge nor a Laurel! *C. Nicholson.*

—— We have plenty of plants of Daphne Laureola in our shrubberies and they all answer to Weathers' description (p. 778 of his invaluable *Practical Guide*) in having branches leafy only towards the top, flowers yellowish green, sweet scented and in drooping clusters from the upper leaf axils, consequently I am puzzled as the illustration in your issue of January 31 suggests that the flower clusters are upright; moreover the flowers are said to be odourless (p. 68). Ours simply scent the air and have done so ever since early January—especially early and late in the day. I enclose some specimens for you to see, as I feel sure there must be more than one variety. Our plants seed freely and we often find young seedling plants. *K. M. Hinchliff, Worlington House, Instow, N. Devon.* [An illustration of Daphne Laureola as sent by Miss Hinchliff, with comments on the plant by Mr. W. J. Bean, is reproduced in Fig. 56, p. 145.—*Eds.*]

What is an Amateur?—Mr. Geo. M. Taylor is singularly unconvincing in his letter on p. 135, wherein he fulminates against the Royal Horticultural Society and its forthcoming show for amateurs. His answer to a self-propounded question (it is used as the title of this paragraph) is "one who cultivates a particular study or art for the love of it, and not professionally," while the Royal Horticultural Society states: "No person shall be allowed to compete as an amateur who gains any part of his livelihood by growing for sale . . ." I can see the difference in the words easily enough, but submit that their meaning is identical, though Mr. Taylor would have us believe otherwise. He proceeds to protest against "a gentleman . . . employing a dozen gardeners" exhibiting in a section "open to all amateurs." Why should he not do so? Surely your correspondent does not think that "a gentleman employing a dozen gardeners" maintains such an establishment "professionally" or gains from it "any part of his livelihood." My conviction is that the gentleman is actuated solely by his love of, and pleasure in, the products of his garden. Were he to compile an accurate profit and loss account with a view to ascertaining how things stood financially he would find a loss instead of a profit, and if he had previously regarded his garden as a source of some "part of his livelihood" he would cut his losses and shut the place up in less than five minutes. With all respect to Mr. Taylor, I say that there areas true, as enthusiastic, and as able amateurs, in their several walks of life, south of the Tweed as there are north of it, and that the "genuine" amateur of Scotland is not a bit more "genuine" than the "genuine" amateur of England. There are Englishmen who have seen the magnificent produce of the professional gardeners and "genuine" amateurs staged at Glasgow and Edinburgh; they have admired and praised it unstintingly, and they have not been envious because they have known that there was as good, or better, stuff at home. I have known Englishmen to have the temerity to adventure into Scotland to meet the "Cocks of the North" in friendly contest, and, tell it not in Gath, they have emerged triumphant from the fray. Let Mr. Taylor send his professional gardeners and his "genuine" amateurs to compete with their peers in London, and he will learn that there are those of the south who can grow and show flowers, fruits and vegetables as well as the next man, even though they cannot crow as lustily at any particular moment of any day of any year. *W. T.*

Potato Golden Wonder and Virus Diseases.—In your very interesting article on "Seed Potatos and Virus Diseases," in your issue of February 7, you state: ". . . the curious partial resistance to virus diseases exhibited by Golden Wonder . . ." Among the Potatos grown in the North of Scotland there is possibly no variety which is so badly affected with mosaic disease as Golden Wonder. As showing the universal presence of mosaic in it, I may mention that last season we obtained stocks from about a hundred different sources. Although some were less affected than others, in no case was there a mosaic-free stock. We have been experimenting with Golden Wonder and the similar variety—Langworthy—for the past five years, endeavouring to get mosaic-free stocks. We started with Langworthy in 1920 by selecting two lots from a growing crop: (1) apparently without mosaic, and (2) with mosaic. The average weights per plant were: No. 1, 2½ lb., and No. 2, 1¼ lb. The produce of these have been planted alongside each other since, and we have obtained the following results, calculated as per acre:—

		With mosaic.		Without mosaic.	
		Tons.	Cwts.	Tons.	Cwts.
1921	...	11	15	14	1
1922	...	9	15	14	19
1923	...	8	15	11	8
1924	...	7	17	10	10

Although most of the selected plants do not show mosaic, an occasional one does. I may state, so far as leaf-roll is concerned, that it is practically non-existent on the farms in the North of Scotland. The few cases that occur are where "seed" had been obtained from the south. There are also, in most seasons, very few aphides. Even where they are present, however, they cannot spread a disease that is non-existent. It seems to me that the only way to get healthy stocks in England is to scrap every Potato and get healthy stocks from Scotland. *Wm. M. Findlay, Marischal College, Aberdeen.*

The Winter at Bangor.—Never do I remember Strawberry plants looking so wretched as they do at the present time. Many plants appear to have died away; the cause undoubtedly is due to the sodden state of the soil, for the roots have perished. Scarcely ever during the past six months has the ground been fit to tread upon. We have experienced no frost, and plants of Lobelia speciosa left in the borders have been growing all the winter. Young Quince stocks still retain some of the old foliage, while the new growths are quite one inch in length. All fruit buds are too far advanced. *J. Kneller, Penrhyn Castle Gardens, North Wales.*

SOCIETIES.

ROYAL HORTICULTURAL.

February 24.—Although not so large as on February 10, the occasion of the Annual General Meeting, there was a good attendance of visitors at the R.H.S. Hall last Tuesday. Orchids were freely shown and chief amongst them were many excellent Dendrobinums. Forced shrubs, including Mollis Azaleas and border flowers were plentiful, and there were two excellent collections of greenhouse Cyclamens. Exhibits of fruit and vegetables were of little importance. There were many attractive paintings of garden scenes and floral studies, and a valuable herbarium collection of British plants.

Orchid Committee.

Present: Frederick J. Hanbury, Esq., F.L.S. (in the chair), Gurney Wilson (secretary), James O'Brien, Chas. H. Curtis, J. Wilson Potter, E. R. Ashton, John C. Cowan, A. McBean, H. G. Alexander, J. E. Shill, H. T. Pitt, Fred. K. Sander, Henry H. Smith, R. Brooman White, T. Armstrong, and Stuart H. Low.

Awards of Merit.

Cymbidium Redshank (insigne × Redstart).—From Lieut.-Col. Sir Geo. L. Holford, Westonbirt, Tetbury (gr. Mr. H. G. Alexander). A noble hybrid and well worthy of a high place in the many fine hybrid Cymbidiums raised at Westonbirt. The plant bore a spike of eight large, wax-like, white flowers, the lip having the side lobes decorated with ascending crimson lines; the front lobe has a broad crimson-purple band with a white margin.

Dendrobium Florence E. King (nobile nobilius var. A. A. Pearson × Artemis).—From Frederick J. Hanbury, Esq., F.L.S., Brockhurst, East Grinstead (gr. Mr. Matthews). A fine Dendrobium with large, rosy-mauve flowers of perfect shape; the large labellum has a claret-purple base with a white band and the front coloured mauve.

Laelio-Cattleya Sheila (L.-C. Britannia × C. Clotho). From Sir H. S. Leon, Bart., Bletchley Park (gr. Mr. Barker). A flower of great beauty, large in size and delicate in tinting; it measured eight inches across. The sepals and very broad petals are clear blush Rose, the broad lip deep crimson-purple with yellow lines at the base.

Cypripedium Robert Paterson var. Brilliant (Memoria F. M. Ogilvie × Eurybiades).—An improvement on the form for which Messrs. Flory and Black secured an Award of Merit at the last meeting. The large, white, dorsal segment has heavy, confluent, blotched lines on the inner half, and smaller spotting towards the white margin. The broad, reddish-brown petals are spotted on the lower half, and the lip is tinged with light brown.

Groups.

Frederick J. Hanbury, Esq., F.L.S., Brockhurst, East Grinstead, was awarded a Silver Banksian Medal for a charming group of Dendrobiums raised chiefly at Brockhurst. The most striking were the handsome D. Florence E. King (see awards) and the beautiful D. Gatton Monarch (nobile nobilius var. A. A. Pearson × Lady Colman), the type in each case having been raised by Sir Jeremiah Colman, Bt. D. Lady Colman is one of the most charming of Dendrobiums and its beauty is apparent in its progeny, D. Gatton Monarch. The flowers are rosy-mauve with a claret disc; some of the plants bore a score of showy blooms. Varieties of D. splendidissimum and others of the D. aureum hybrids were represented and the group was well arranged, displaying the showy and fragrant flowers to fine advantage.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), was awarded a Silver Banksian Medal for an excellent group in which the hybrids and species were well represented. Among the hybrids was a selection of young plants of the Epidendrum Endresio-Wallisii raised at Rosslyn (see p. 144) with their parents, which made the exhibit most interesting. At the back of the group were Cymbidiums, noteworthy plants being good forms of C. Alexanderi and C. Lady Colman. Among the varieties of Dendrobium Wardianum was a fine white form which has been in the Rosslyn collection over twenty years, where for the same long time the fine varieties of Lycaste Skinneri which included a good pure white form, have been cultivated. Odontoglossums, Odontiodas, and interesting species were included in this group.

Messrs. Sanders, St. Albans, secured a Silver Banksian Medal for a fine group, at the back of which were showy Cymbidiums and varieties of Dendrobium Wardianum, D. nobile, and hybrids. The Odontoglossums included finely coloured forms, but the most effective were the fine sprays of the large, white Odm. eximium xanthotes and white Odm. ardentissimum. Among Cattleyas and hybrid Cattleyas the large Cattleya Furness, B.-C. Massangeana, and yellow Laelio-Cattleyas, arranged with the richly coloured Odontiodas Grenadier and Bradshawiae gave brilliant colour. White Coelogyne cristata set off the front of the exhibit, and several rare species gave additional interest to the collection.

Messrs. Stuart Low and Co., Bush Hill Park and Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for a showy group of Cymbidiums, Odontoglossums, and Odontiodas effectively arranged, the plants being exceptionally well grown and profusely flowered. A selection of hybrid Dendrobiums showed great variety, and Cattleyas and Brasso-Cattleyas were also shown well. Among the species were Odontoglossum aspidorhinum and others of the lesser-branched forms, whilst the species of Epidendrum included the rare little E. polybulbon album.

Messrs. Cowan and Co., Southgate, staged a group which included their very handsome Odontoglossum Marguerite (eximium × Doreen), a flower of rich Tyrian-purple with a white margin; several of their showy Brasso-Cattleya British Queen, good Cattleya Tityus, and scarlet Odontioda Clotho.

Messrs. Flory and Black, Slough, were awarded a Bronze Banksian Medal for a group in which were a selection of Cypripediums, Laelio-Cattleyas, and Cattleyas, the last including a good form of the pure white C. chocoensis alba. Odontoglossums and Odontiodas were also well shown by Messrs. Flory and Black.

Other Exhibits.

Baron Bruno Schröder, The Dell Park, Englefield Green (gr. Mr. J. E. Shill), showed a fine, cut spike of Sophro-Laelio-Cattleya Prince Hirohito, a large scarlet-red variety with a ruby-red lip.

R. Gerrish, Esq., Milford Manor, Salisbury (gr. Mr. Sorrell), exhibited a fine plant of the showy Odontioda Lerna Gerrish's variety (Oda. Joan × Odm. Dusky Monarch) with dark purple sepals and petals and white front to the lip.

G. W. Bird, Esq., Manor House, West Wickham (gr. Mr. Redden) displayed Odontioda Rubus, Wickham Beauty (Oda. Leeana × Odm. crispum) which had previously secured an Award of Merit.

Messrs. J. and A. McBean, Cooksbridge, showed Cattleya Empress Frederick var. ignea, a variety of bright violet-rose colour with ruby-purple front to the lip.

Lt.-Col. Sir Geo. L. Holford, Westonbirt, Tetbury (gr. Mr. H. G. Alexander), showed the fine Cymbidium Flamingo (Alexanderi × Merlin), a noble, large form with broad sepals and petals and showy lip that has dotted lines of ruby-purple in front.

Floral Committee.

Section A.—*Present:* Messrs. H. B. May (in the chair), J. F. McLeod, Arthur Turner, H. J. Jones, W. Howe, Donald Allan, J. M. Bridgeford, Hugh Dickson, M. C. Allwood, G. W. Leak, J. B. Riding, G. R. Janes, F. Streeter, F. G. Cousins, W. B. Gingell, D. B. Crane, D. Ingamells, and H. R. Darlington.

Section B.—*Present*: Messrs. W. J. Bean (in the chair), G. Reuthe, G. Harrow, E. H. Wilding, W. B. Cranfield, Reginald Cory, E. A. Bowles, R. D. Trotter, G. Yeld, F. G. Preston, C. T. Musgrave, R. C. Notcutt, Gerald Loder, T. Hay, Jas. Hudson, and Clarence Elliott.

AWARDS OF MERIT.

Crocus Blue Butterfly.—A charming variety, scarcely more than three inches tall, but the blooms are large and of a lovely deep blue shade on the outside and a paler shade inside, the interior colour being deeper on the outer than the inner segments. The base of the flower, stamens and stigmas are all orange coloured. Shown by H. McD. EDELSTEN, Esq., Hillside, Lindfield, Sussex.

Cyclamen persicum Shell-pink.—This is a desirable addition to the greenhouse Cyclamen. The foliage is prettily marked, and the large, well-formed flowers are of lovely shell-pink, almost pearly-pink colour, with carmine base. Shown by Messrs. SUTTON AND SONS.

Kitchingia uniflora.—A quaintly pretty Crassulaceous plant of lowly spreading habit, from Madagascar. The thick, fleshy, succulent leaves vary in shape, some being rounded while the older ones are oval with four slight indentations or crenations. The flowers may be borne singly on two-inch stems, or there may be so many as three. They are pendulous, inflated, with a slight constriction just below the four small spreading lobes. The colour is light, almost transparent, pink with a violet tint in some flowers, while the four lobes at the mouth are reddish and the interior is pale pink. Shown from the CAMBRIDGE BOTANIC GARDEN.

Lachenalia Excelsior Seedlings.—In this case the award was made to the strain, which is exceptionally good. All the spikes are large and bear plenty of good flowers often of uncommon colouring. The ground colours are mostly yellow, chrome and lemon-yellow, and some are tipped with reddish maroon, others with pale terra-cotta, while one had a delicate pale-green tube. In many instances the stems were attractively mottled. Shown by Messrs. BARR AND SONS.

Plectranthus chirazulensis. — The genus, Plectranthus which is allied to Coleus, includes about 120 species of herbs and sub-shrubs and is spread over tropical Africa and Asia. The flowers range in colour from blue and purple to lilac. The species under notice occurs in tropical Africa and is of erect, shrubby character. The loose panicles bear plenty of smallish blue flowers, mostly in whorls around the stems. The rich foliage is somewhat Nettle-like, lanceolate-cordate at the base with crenate margins and heavily veined. The stems of the plant are rather fleshy while the much more slender flower stems are lightly hirsute. Shown by Sir JOHN RAMSDEN, Bt. (gr. Mr. G. Taylor), Bulstrode Park, Gerrards Cross, Bucks.

Rhododendron sutchuenense × Cornubia.—The influence of Rhododendron Cornubia was apparent in the large and shapely truss which was made up of eighteen large blooms of bright pink colour with reddish dots on the upper segments. The handsome, rich green leaves are fully nine inches long by three inches broad. Shown by Col. S. R. CLARKE, C.B., Borde Hill, Cuckfield, Sussex.

GROUPS.

Greenhouse Cyclamens were the most important amongst the collections before the Floral Committee. Messrs. SUTTON AND SONS arranged a great many of their well-grown plants in separate colours amongst Ferns, Palms, and other foliage plants, making a most attractive display. Many of the named varieties which we recently commented upon were to be seen, while the visitors seemed particularly drawn to the quantity of the new variety Shell-pink, which received an Award of Merit. Vulcan, a dark crimson of almost smoky colouring, and Firefly, a vivid crimson, were also greatly admired. In addition to the new variety Shell-pink, there were several of bright mauve colouring and of large size, but in these there seemed a slight danger of losing the elegant typical form of the flower, which is generally so characteristic of the admirable Reading strain. (Gold Medal).

The Caledonian strain of Cyclamens, grown by Mr. J. W. FORSYTH, was again well shown, and on the present occasion the inclusion of baskets added to the general effect. The excellent variety White Wonder was prominently arranged, while along the front there were many of the St. George type, which has such attractive foliage in addition to beautiful flowers. (Silver-gilt Banksian Medal).

Carnations were very fresh and in good, bright colours. Messrs. ALLWOOD BROS. included with many standard varieties vases of a new variety named Shot Silk, of rich Indian chestnut colouring, flaked and flamed with deep salmon-red. The large fringed flowers are pleasantly fragrant, making a gorgeous and desirable flower. Beauty of Durham, a rich salmon, rose-pink sort also possesses the valuable quality of fragrance: Butterfly, another recent variety, is of peculiar colouring, not unlike a very large double pink and white Sweet William. (Silver-Gilt Banksian Medal).

In a very useful collection of Carnations arranged by Mr. C. ENGELMANN, Spectrum, a large bloom of bright scarlet colour, was very prominent. He also showed good vases of Topsy, Red Laddie, Cupid, and Janet. (Silver Banksian Medal).

Forced Roses of considerable attraction were staged by Mr. ELISHA J. HICKS and Mr. GEORGE PRINCE. The former included the valuable deep pink variety America, Climbing Lady Hillingdon, Padré, and delightful sprays of the yellow Banksian Rose (Silver Banksian Medal).

Fortune's Yellow of charming colouring was included in his collection by Mr. GEORGE PRINCE, who also had vases of Coral Cluster, splendid blooms of Souv. de Claudius Pernet and last summer's novelty, Victoria, of good pink colour and delightful perfume (Bronze Banksian Medal).

Many profusely flowered plants of Mimosa, chiefly Acacia falcata, were shown by Messrs. STUART LOW AND CO. amongst Azalea indica varieties, and a couple of graceful plants of the small-flowered Olearia ramulosa. They also staged good Carnations, including their White Pearl and Mauve Queen, a smaller, but apparently very free-flowering variety (Bronze Banksian Medal).

Amongst many forced shrubs Messrs. L. R. RUSSELL, LTD., included Franciscea calycina and Begonia manicata (Silver Banksian Medal). A large collection of Azalea mollis and A. mollis × sinensis in glowing, scintillating colours was arranged by Messrs. R. AND G. CUTHBERT. Of the hybrids A. Anthony Koster, rich yellow, and Sybil, yellow flushed with Peach-pink, were particularly attractive, as also was Brilliant amongst the mollis varieties. At one end of the Azaleas they displayed profusely berried pot plants of Skimmia japonica (Silver Banksian Medal).

Very many trusses of the brilliant Rhododendron Cornubia were exhibited by Messrs. R. GILL AND SON, who also staged many good R. arboreum seedlings, R. albescens, and R. ciliicalyx. Besides the Rhododendrons there were many good blooms of St. Brigid Anemones and masses of Primula The Jewel, lifted from the open ground (Bronze Banksian Medal). Messrs. REAMSBOTTOM AND CO. also staged an attractive collection of St. Brigid Anemones.

In the middle of the hall, Messrs. WM. CUTBUSH AND SON displayed a very attractive rockery and a collection of forced shrubs, largely of Ghent and Mollis Azaleas. (Silver-Gilt Banksian Medal.) An adjoining group, arranged by Messrs. WALLACE AND CO., also possessed considerable attractions. This was of such shrubs as Japanese Cherries, Azaleas, Viburnum Carlesii and Conifers suitable for the rock garden. (Silver-Gilt Banksian Medal.)

Various uncommon and interesting shrubs, including Rhododendrons and Camellia reticulata, were shown with boxes of alpines by Mr. G. REUTHE. (Silver Banksian Medal.)

Just inside the entrance, Messrs. J. CARTER AND CO. had a charming Crocus garden, where white Crocuses and those of purple shades were springing up from fresh, green turf and backed by Conifers and Cherries, with a margin of Erica carnea. (Silver-Gilt Banksian Medal.)

Chief amongst the many alpines shown were Saxifrages, and of these Messrs. R. TUCKER AND SONS showed S. burseriana sulphurea, S. b. crenata, and S. Brookside, with Viola gracilis, Primula Juliana, and other genera. (Silver-Gilt Banksian Medal.) Messrs. M. PRICHARD AND SON staged Saxifraga oppositifolia major, S. Lady Beatrix Stanley, Megasea ligulata, and other desirable alpines. (Silver Banksian Medal.)

Mr. F. G. WOOD had a pretty rock garden, in which they showed Blue Primroses and the double Lilac and double yellow varieties. (Bronze Banksian Medal.)

Messrs. BAKERS, LTD., showed Primula Wanda and Saxifraga Burseriana Gloria with other alpines (Bronze Banksian Medal), Crocuses, Saxifrages in variety, Iris reticulata, Primula denticulata, and hardy shrubs were attractively shown by Messrs. CARTER PAGE AND CO. (Silver Banksian Medal.)

The elegant purple-flowered Sisyrinchium grandiflorum, Anemone blanda varieties, Iris orchioides, I. reticulata and various shrubs were well arranged by Messrs. WATERER, SONS, AND CRISP (Bronze Banksian Medal). Dielytra spectabilis, with various alpines, was shown by Messrs. J. CHEAL AND SONS (Bronze Banksian Medal).

A fascinating collection of spring flowers was staged by Messrs. BARR AND SONS alongside their Narcissi. This included many Crocuses, Chionodoxas, and Primroses, with Forsythia intermedia and other hardy shrubs (Bronze Banksian Medal). Forsythias, with Moriseas and other lovely alpines, were displayed by Messrs. SKELTON AND KIRBY, while Messrs. MAXWELL AND BEALE showed hardy plants, and Mr. JOHN KLINKERT had a collection of topiary specimens. Mr. J. A. MILLER contributed an extensive collection of a good strain of Polyanthus with other spring flowers (Bronze Banksian Medal). Violets were shown by the Misses HEATHCOTE and Mr. J. J. KETTLE (Bronze Banksian Medals).

The many exhibits of paintings included another collection from Miss WILLMOTT of the work of Mr. Champion Jones. This time it was almost solely of Fritillarias and Galanthus executed with great skill and fidelity. Miss MARION BROOM, Miss NELLIE BLACKLOCK, Mrs. HENRY SPENCER, Miss ALICE F. WILKINSON, Miss WINIFRED WALKER, Miss AGNES E. FOREMAN, Miss MAUDE ANGELL and Miss ELLEN WARRINGTON showed paintings of garden scenes and flowers.

Miss WINIFRED M. A. BROOK had a valuable collection of faithful drawings of harmful insects on their respective host plants.

Many interesting herbarium specimens of British plants discovered and described by him were shown by Mr. G. CLARIDGE DRUCE. Orchids and Grasses predominated, but there was a considerable variety of native plants.

Narcissus and Tulip Committee.

Present; Mr. E. A. Bowles (in the chair), Sir A. D. Hall, Rev. Joseph Jacob, Miss Willmott, and Messrs. Geo. Monro, R. Meyer, J. W. Jones, H. G. Hawker, F. Herbert Chapman, Geo. Churcher, Reginald Cory, Herbert Smith, C. W. Needham, Peter R. Barr, W. Poupart, G. W. Leak, Chas. H. Curtis, W. B. Cranfield and Robt. W. Ascroft, Hon. Sec.

GROUPS.

Messrs. R. H. BATH, LTD., had an excellent display of spring bulbs growing in bowls of fibre. These included many varieties of Hyacinth, Narcissus, including large Trumpet Daffodils; Darwin Tulips, Crocuses and Fritillaria Meleagris, and all of them showed how very successfully bulbs may be grown in ornamental bowls of prepared fibre (Silver-gilt Banksian Medal).

Although not very large the collection of Narcissi arranged by Messrs. BARR AND SONS was exceedingly choice and interesting. There were many seedlings of large Trumpet Daffodils, both selfs and bicolors, of much more than average merit. Named sorts of the same type included Shylock and Ptolemy. In addition to these they showed equally good flowers of Barri and Incomparabilis types. Adjoining the Narcissi they displayed particularly good white hybrid Hippeastrums and the Excelsior strain of Lachenalia, which received an Award of Merit. The latter included Siam, luteola and Leiden (Bronze Banksian Medal).

Fruit and Vegetable Committee.

Present: Messrs. C. J. A. Nix (Chairman), J. Cheal, W. Lobjoit, W. Poupart, A. H. Pearson, H. S. Rivers, H. V. Taylor, W. Giles, F. Jordan, E. Harriss, A. Bullock, H. Prince, T. Pateman, E. Beckett, A. W. Metcalfe, S. B. Dicks, Geo. F. Tinley, W. H. Divers, and E. A. Bunyard.

The only business this Committee had to consider was the merits of three seedling Apples, but they were all much past their best and none, in the opinion of the Committee, showed any advance on existing varieties.

KINGSTON AND SURBITON CHRYSANTHEMUM.

AT the Annual Meeting held recently, the report and balance sheet for last year were read. There is a balance in hand of £17 3s. 1d., notwithstanding the excessive rain on the day of the show, which reduced the attendance. The Report was adopted unanimously with a vote of thanks to the Secretary, who was re-appointed. G. C. Hodgson, Esq., was unanimously re-elected President, and most of the Committee were again elected.

It was decided to hold the Show on Wednesday, Nov. 4, at Surbiton Assembly Rooms.

Another fine Silver Challenge Cup has been presented, and as the Committee has decided to increase the number of open classes and allow trade growers to compete, it is hoped to increase the number of exhibitors considerably.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FRIDAY, February 20. *Committee present:* D. Losh-Thorpe, Esq. (in the chair), Messrs. A. Burns, A. Coningsby, D. A. Cowan, A. G. Elwood, A. Keeling, J. McCartney, E. W. Thompson, and H. Arthur (Secretary).

FIRST-CLASS CERTIFICATES.

Odontoglossum crispum, Rosy Dawn.—A well shaped white flower the petals having a rosy shade. From S. GRATRIX, Esq.

Odontoglossum crispum var. Purity.—A beautiful round-shaped flower, with petals and sepals of the purest white; the flat white lip has a reddish-brown crest and yellow throat. From Mrs. GRATRIX.

AWARDS OF MERIT.

Cypripedium Gundo (*Carola* × *villosum Beekmanii*) and *C. Aurcoma* (*aureum Goliath* × *Desdemona*). From P. SMITH, Esq.

Obituary.

William Hogg.—We regret to have to record the sudden death of Mr. William Hogg, a retired gardener, of Peebles, which took place on Thursday, February 19, under distressing circumstances. Mr. Hogg was playing a round on the golf course at Peebles; he stooped to pick up his putter to hole at one of the greens when he had a seizure, and when medical assistance arrived life was extinct. Mr. Hogg, who was eighty-two years of age, was much respected.

C. Harman Payne.—It is our sad duty to record another great loss to horticulture in the death of Mr. C. Harman Payne, whose name was probably as well-known in horticultural circles in this country and abroad as that of any Englishman who loved flowers and gardening. He died at his home at Catford on the 23rd inst., aged 71 years. No one of his contemporaries possessed a greater knowledge of the literature of florists' flowers than this erudite gentleman, and he was as well acquainted with French works on floriculture as he was with those published in his own country. His knowledge of the history of plants was indeed remarkable and by his investigations and researches he was able to correct many errors which former writers on plants had fallen into, for he was not content to follow blindly the opinions of others, but searched out first hand for himself all available sources from which reliable data could be obtained. Thus it will be remembered he was able to show that the common idea of the Dahlia having been introduced to this country in 1789 was an erroneous one, and he discussed the early history of the flower fully in an article on the subject in *Gard. Chron.*, September 23, 1916, p. 143. Perhaps he was more interested in the Chrysanthemum than in any other flower, and his leisure time was largely spent in advancing this beautiful flower, not so much as a cultivator, but by his writings and association with various societies connected with the plant. He was as well acquainted with the Chrysanthemum in France as he was with the flower in his own country, and he attended most of the French Chrysanthemum shows, either in the capacity of a juror or as a visitor, and he has probably contributed more reports on continental flower shows to the English press than any other correspondent. His association with the National Chrysanthemum Society dates from nearly half a century ago; for some thirty-six years he had been Honorary Foreign Corresponding Secretary to the N.C.S. He was a fluent linguist, and because of this, as well as his keenness in horticulture, he was appointed Director and Foreign Press Secretary of the Royal International Horticultural Exhibition in 1912. He held many offices and distinctions, and was honorary member of many continental and American societies. In 1896 he was appointed by the French Government a Chevalier of the Merité Agricole, was promoted an officer of that Order in 1902, and in 1911 given the "Palmes Academiques," by which he became an Officer de l'Instruction Publique. His best known work is *The Florist's Bibliography.* To sum up, we cannot do better than quote from our appreciation of Mr. C. Harman Payne in the issue for August 6, 1921, p. 70, when we stated that "he is a man of many parts, for he can report a show or a conference, give a lecture, write a literary, critical, or descriptive article, or make a humorous after-dinner speech in English or French." Much of his literary work has been published in *The Gardeners' Chronicle*, and we have lost a valued collaborator and friend, whose place it will be difficult to fill.

John Turner.—We regret to learn of the death of Mr. John Turner, which occurred on Thursday, the 19th. Mr. Turner, who was eighty-five years of age, was well-known in the Glasgow district as he had been employed as gardener to the late R. C. Graham, Esq., at Skipness Castle, and afterwards to Mrs. Graham and her family, for a period of forty-seven years. He retired from active service in 1916 and took up his residence at Innellan. He was held in very high esteem by his employers and by all who had the pleasure of his acquaintance.

ANSWERS TO CORRESPONDENTS.

CHRYSANTHEMUMS: *R. G.* The times of flowering of the several varieties you mention are as follow: Florrie King, early November; Peace, middle to end of November; White Swan, middle of November; Isabel Felton, late November; John Ridd, middle of November; E. Cavell, early November, and R. C. Pulling, early November.

GREEN VERSUS BLANCHED ASPARAGUS: *S. B.* The question as to whether Asparagus should be used green or blanched is a matter to be decided on the ground of personal taste. It is by no means necessary to blanch your Asparagus provided your employer wishes it to be green. As a matter of personal taste we prefer green to blanched Asparagus.

NAMES OF PLANTS: *J. P.* Zygopetalum Mackayi, a handsome old species from Brazil. It has always been a favourite in gardens and valued for its decorative qualities. *F. B.* 1, 2, and 3, varieties of Cypripedium Lathamianum (Spicerianum × villosum): 4, not properly developed, but it is probably Cypripedium Mons. de Curte (Boxallii × insigne). *J. W.* 1, Epidendrum Wallisii; 2, Dendrobium nobile; 3, Cymbidium Schlegelii.

NAMES OF FRUIT: *Constant Reader.* Wyken Pippin.

PEAR TWIGS DYING: *H. P.* The shoots of your Pear tree are infected with the winter stage of the common Pear scab, pustules of which may be seen on the twigs. This complaint was very prevalent last year on the fruits. These diseased shoots will cause the scab to start afresh each year, and, so far as possible, scab-infected shoots should be cut out and burned. The tree should be sprayed in spring and summer with either Bordeaux mixture or lime sulphur, Bordeaux mixture being the safest to use on all varieties of Pears. The first spraying should be done directly the fruits are set and the spraying repeated a month afterwards, taking care to see that the fluid reaches the under-surface of the leaves.

RUST ON CHRYSANTHEMUM LEAVES: *A. B.* From your description we suspect thet the Chrysanthemum leaves are attacked with rust, caused by the fungus named Puccinia hieracii. All badly infected leaves should be removed and burnt and the plants sprayed at brief intervals with a solution of sulphide of potassium.

Communications Received.—Florist—C. E. G.—K. T. —J. K.—D. M. F.—J. F.—J. P.—J. F. D.—W. I.—J. P. —E. P. S.

MARKETS.

COVENT GARDEN, Tuesday, February 24, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0-13 0
—elegans	10 0-12 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Azaleas, per doz.	15 0-36 0
Cacti, per tray, —12's, 15's	5 0- 7 0
Crotons, per doz.	30 0-45 0
Cyclamen—	
—32's	36 0-48 0
—48's	24 0-30 0

	s. d. s. d.
Cyrtomium	10 0-15 0
Erica melanthera, 48's per doz.	21 0-30 0
— —60's, per doz.	8 0-10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0- 4 0
Marguerites, white, 48's, per doz.	18 0-30 0
Nephrolepis, in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large 60's	5 0- 6 0
—small	4 0- 5 0
—72's, per tray of 15's	2 6- 3 6

Remarks:—Pot plants are in moderate demand. The chief flowering plants consists of a few Ericas, white and pink, Cinerarias, Daffodils, a good selection of Hyacinths, Marguerites, and Azaleas, of which there is a plentiful supply. Cyclamens are more limited. A few pots of Wistarias in flower are a very attractive line and selling freely. All Ferns are gradually improving in quality, for which there is only a moderate supply.

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0-24 0
—cuneatum, per doz. bun.	12 0-15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0- 3 0
med. sprays	1 6- 2 6
short „	0 9- 1 3
—Sprengeri, per bun.	
long sprays	1 6- 2 0
medium „	1 0- 1 6
short „	0 4- 1 0
Bouvardia, white, per doz. bun	12 0-15 0
Camellias, White, per box	3 6- 4 0
Carnations, per doz. blooms	3 0- 5 0
Croton leaves, var., doz. leaves	0 9- 2 6
Daffodils—	
—Emperor, per doz. bun.	12 0-18 0
—Golden Spur, per doz. bun.	4 0- 5 0
—Henry Irving, per doz. bun.	4 0- 5 0
—King Alfred, per doz. bun.	18 0-21 0
—obvallaris, per doz. bun.	3 0- 5 0
—Sir Watkin, per doz. bun.	10 0- 15 0
Fern, French, per doz. bun.	0 9- 1 3
Freesia, per doz. bun.	4 0-18 0
—White, per doz. bun.	2 6- 3 0
—Special, long, per doz. bun.	9 0-12 0
French Flowers—	
Carnations, per bun	1 6- 2 0
Marigolds, per pad	7 0-10 0
Mimosa, per pad	8 0-12 0
—per bun.	1 0- 1 3
Narcissus—	
—Grand Primo, per doz. bun.	5 0- 8 0
—ornatus, per doz. bun.	7 0-10 0
—Soliel d'Or, per doz. bun.	4 0- 5 0
Ranunculus, double scarlet, doz bun.	8 0-10 0
—Carmine, per doz. bun	8 0-12 0
Roses, Safrano per bun. of two doz. blooms	2 6- 3 6

	s. d s. d.
Roses, per pad	8 0-10 0
—Ulrich Brunner, per doz. blooms	6 0-10 0
Stock, double white, per pad 24 bunches	8 0-10 0
—double coloured	7 0- 8 0
Violets, Parma, per bun.	3 0- 4 0
—single, per pad	8 0-12 0
Galax, American, green and bronze, per doz. bun.	— 3 0
Iris tingitana, per doz. spikes	5 0- 6 0
Lilac, Dutch, per spikes	4 0- 8 0
Lilium lancifolium album, per doz. blooms	— —
—rubrum, long, per doz. blooms	4 0- 5 0
—short „ „	3 0- 4 0
Lilium longiflorum long, per doz.	8 0- 9 0
short „ „	— —
Lily of the Valley, per doz. bun.	24 0-36 0
Narcissus—	
—Scilly White, per doz. bun.	4 0- 6 0
Orchids, per doz.	
—Cattleyas	24 0-30 0
—Cypripediums	5 0- 7 0
Primroses, per doz. bun.	2 6- 4 0
Prunus triloba (Dutch), per bun.	1 0- 1 6
Richardias (Arums) per doz.	8 0-10 0
Roses, new crop, per doz. blooms, Richmond	6 0- 9 0
Ruscus, French, per bun.	1 0- 2 0
Smilax, per doz. trails	2 0- 3 0
Snowdrops, doz. bun.	2 0- 3 0
Sweet Peas, per doz. bun.	15 0-18 0
Tulips, per bunch—	
—Couronne d'Or	2 0- 2 6
—La Reine	1 6- 2 0
—Mons Tresor	2 0- 2 6
—Prince of Austria	2 0- 2 6
—Rosina	2 0- 2 6
—Thomas Moore	1 9- 2 0
—Wm. Copland	3 0- 4 0
Violets, per doz. bun	2 0- 4 0

Remarks:—Supplies in general have been somewhat heavier during the past week. Carnations remain firm in price, white blooms being most in demand; scarlet sorts are the most plentiful. Richmond Roses are increasing in quantity, but the blooms are mostly second grade, and special quality blooms are soon cleared. Other varieties will be greatly welcomed. Richardias (Arums), which have been fairly plentiful, were much fewer this morning. The quantities of Lilium longiflorum appear to be sufficient for present requirements, and are easier in price; there is only a limited supply of L. lancifolium rubrum at present. Daffodils are arriving in excellent condition from home growers, and the sorts include Emperor, Henry Irving and King Alfred. There are also some very fine blooms of Narcissus ornatus from the Hampton district. Increased consignments of flowers have been received from the Channel Islands, chiefly from Guernsey, consisting mostly of Daffodils and Narcissus. Similar consignments are also arriving from Cornwall, which is sending large consignments of Anemones, Violets, and Snowdrops. There is little change to note amongst the French consignments; Anemones Mimosa, and Violets are arriving in large quantities, the present weather conditions being most suitable for the transit of these blooms.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Oregon Newtown	12 6-17 0
—Newton Wonder	6 0-10 0
—Bramley's Seedling—	8 0-16 0
—Californian Newtown	10 6-13 0
—Spitzenberg	13 0-15 0
—Nova Scotia—	
—Stark	21 0-26 0
—Russett	25 0-35 0
—Baldwin	21 0-26 0
—Greening	22 0-30 0
Bananas, singles	17 0-25 0
—doubles	17 0-27 6
Grapes—	
—Gros Colmar	3 0- 5 0
—Belgian Colmar, per lb.	2 6- 3 0
—Almeria, per barrel	30 0-35 0
Grape Fruit, Cuban	23 0-25 0
—Jamaica	— 25 0
—Florida	25 0-27 6

	s. d. s. d.
Lemons, Messina, per box	8 0-10 0
—Murcia	12 0-14 0
—Naples	15 0-25 0
Oranges, Jaffa	16 0-20 0
—Spanish—	
—300's	14 0-30 0
—360's	14 0-20 0
—504's	14 0-18 0
—Seville Sour	18 0-22 0
—Malaga Sour	18 0-22 0
Pears, South African—	
—Williams's Bon Chretien	5 0- 7 0
—Clapp's Favourite	4 0- 5 0
Pines	2 0- 4 6
South African Peaches	6 0-12 0
—Chalcots	6 0- 8 0
—Nectarines	5 0-10 0
—Plums	
—Santa Rosa	5 0- 6 0
—Wickson	6 0- 8 0
Tunis Dates, doz.	5 0- 6 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	2 6- 4 0
—Worthing	3 0- 4 0
—Madeira, per box	2 6- 6 0
Beets, per cwt.	4 6- 5 0
Cabbage, per tally	6 0- 8 0
Canary Island Tomatos	15 0-22 0
Cauliflowers, per doz	1 6- 3 0
Forced Mint, per doz.	4 0-10 0
Celery, best, washed, per bundle	2 0- 3 0
—Second	0 9- 1 0
Chicory, per lb.	0 3-0 3½
Carrots, per cwt.	3 6- 5 0
—New	1 0- 1 3
Cucumbers, per doz.	12 0-18 0
Dutch Onions	11 0-13 0
Endive, per doz	1 6- 3 0
Batavia, per doz.	3 0- 3 6
English Asparagus—	
—Finest	10 0-10 6
—Best	4 0- 6 0
French Asparagus—	
—Paris Green	8 0- 9 0
—Lauris	10 0-12 0
Greens, per bag	1 0- 2 0
Horseradish, per bundle	2 0- 2 6
Leeks, per doz. bundles	2 6- 3 6

	s. d. s. d.
Lettuce, per dozen	1 6- 2 0
—Outdoor	2 6- 3 0
Mushrooms, cups	2 0- 3 0
—broilers	1 3- 1 9
Onions, Valencia, per case	15 0-16 0
—English, per cwt.	12 0-13 0
Parsnips, per cwt.	4 0- 6 0
Potatos, Canary Island, per case	8 0-14 0
—King Edward	16 0-18 0
—Spring crop	15 0-18 0
Potatos, per ton—	
—Dunbar	220 0-240 0
—King Edward	210 0-230 0
—White	90 0-200 0
—New Guernsey lb.	1 0-0 10
Potatos, New—	
—Algerian, per lb.	0 2½-0 3
—Azores, per case	10 0-18 0
Radishes—	
—Guernsey round	1 6- 2 0
—Guernsey long	1 0- 1 6
—French	3 0- 3 6
Rhubarb, Forced per doz.	2 3- 3 0
Savoys, per tally	7 6-12 6
Seakale, per punnet	1 6- 2 0
Spinach, per bushel	5 0- 6 0
Sprouts, bag	4 0- 6 0
Sweet Potatos	3 0- 4 0
Turnips, per cwt.	4 0- 5 6
—New	— 1 0

Remarks:—Rather more business has been transacted during the past week. The weekly shipment of fruits from South Africa, although heavier, sold fairly freely. The condition of the fruits generally was very good and prices were well maintained. The demand for Apples, except for the very finest grades, is on the quiet side, and values have been inclined to fall slightly. A few hot-house Grapes, home-grown and from Belgium, are in firm demand in spite of the competition of Peaches, Nectarines, Pears, and Plums from the Cape. Forced Rhubarb has been a keen trade all the week, best marks selling at improved figures. Some natural Rhubarb is being marketed, and although on the small side, is selling well. Brussels Sprouts are a short supply and their prices are higher. Green vegetables are fairly plentiful, with quotations showing no change. Forced Beans after being quoted lower, owing to increased supplies, are a rather better trade at the former prices. Forced Asparagus is a steady trade in spite of competition of French grown Asparagus. New Potatos are almost a drug on the market, supplies from Algeria, Canary Islands, and Azores moving very slowly. Forced Potatos from Guernsey are not yet plentiful and their values keep steady. Old Potatos are still popular and in good condition.

GLASGOW.

A further general improvement was experienced in the various sections of the market, the upward movement in prices which began a fortnight ago having made renewed progress during the past week, and more particularly towards the close, when values were at their best.

The feature of the fruit market was an advance of 3/- to 5/- per case in Oranges; Valencia 300's, 360's, and 240's, which were previously averaged from 10/- to 14/- rose to 15/- and 20/-, while 420's ranged from 20/- to 22/-, and Mercia 300's from 20/- to 24/-. Considerable quantities of fruit, comprising recent cargoes, arrived in poor condition, and had to be sold as "wasters" at greatly reduced prices to street traders. Sunkist Oranges remained steady at 18/- to 20/- per case, but Jaffas commanded 4/- per case more at 18/- to 20/-. Seville Bitters were unchanged at 16/6, and Mercia Lemons, 300's at 12/6 to 15/-. Apple prices continued firm, more particularly the finer grades of case fruit. Winesap Apples making from 13/6 to 16/6; Newtowns, 13/6 to 17/-; Spitzenberg, 13/6 to 16/-; Delicious, 16/6 to 17/-; Rome Beauty, 12/6 to 14/6; and Golden Ortley, 13/6 to 15/-. Winter Nelis Pears sold at 32/- per case for the Oregon product, and 30/- for Washington. Cape Pears averaged 6/6 per box; English Gros Colmar Grapes sold at from 3/9 to 5/- per lb., and Scotch from 3/6 to 4/-. Grape Fruit realised 23/6 to 25/- per case, and Figs 8½d. per lb.

Interest in the vegetable section was chiefly centred in Onions, which further recovered 1/- to 2/- per case of the recent decline, and until Egyptian consignments arrive present indications point to still dearer prices. Fives were up to 16/-, fours, 13/6, sixes, 15/-, and Dutch, 11/6 to 12/6 per bag. Cauliflowers made 4/- per doz.; Leeks, 6/- per doz. bundles; Beans (Madeira), 6/- per box; Lettuces, 1/9 to 2/3; Radish, 2/6; Siboes, 7/- to 8/- doz. bunches; Watercress, 1/- and Mustard and Cress, 2/6 to 3/-.

Supplies of cut flowers were well maintained and prices moved in favour of growers. Some well-grown Tulips arrived from local nurseries and average prices for the week ranged as follows:—Bartagon, 1/- to 1/4 for 6's, Farncombe Sanders, 1/- to 1/3, Copland, 10d. to 1/3, Flamingo and Couronne d'Or, 10d. to 1/2, Lucretia, 9d. to 1/-, Tea Rose, 8d. to 1/-, Prince of Austria, 7d. to 10d., and Murillo, 8d. to 1/-. Daffodils were dearer, King Alfred yielding from 1/- to 1/3 for 6's, Golden Spur, 1/- to 1/2, Sir Watkin, 10d. to 1/2, ornatus, 6d. to 10d, and Guernsey blooms, 3/- to 4/- per doz. for Primo and W. Irving. Prices for Carnations were unchanged at 2/- to 4/- per doz. Lilac made 5/- to 8/-, Mimosa, 6/- per cane; French Violets, 2/- to 2/6 per doz. bunches, English Violets, 1/- to 2/-; Wallflowers, 2/-; Snowdrops, 1/6 to 2/-; Lily-of-the-Valley, 2/- to 2/6 per bunch; Richardias (Arums), 8/- to 10/- per doz.; Guernsey blooms, 4/- to 6/-; Lilium Harrissi, 10/-. Bowls of Hyacinths varied from 1/9 to 2/- each and "Sailors" were 6/- per doz.

TRADE NOTE.

EUONYMUS PULCHELLUS AUREIS was registered with the International Bureau of Registration of Horticultural Novelties connected with the Federation Horticole Professionnelle Internationale, during the present month. The raiser is M. Henri Detriche, Angers, France; the novelty has golden foliage.

GARDENING APPOINTMENTS.

Mr. C. Abbott, for the past two years Gardener to H.R.H. THE DUKE OF YORK, and previously for nine years with the late LORD FARQUHAR, at White Lodge, Richmond Park, Surrey, as Gardener to SIR EDWARD MOUNTAIN, Bart., Norbury Park, Dorking.

Mr. W. J. Earl, for the past eight years Gardener to Mrs. ARTHUR WILSON, Tranby Croft, Hull, Yorkshire, as Gardener to the Right Hon the EARL OF DERBY, K.G., Knowsley Hall, Prescot, Lancs. (Thanks for 2s. 6d. for R.G.O.F. Box.—EDS.)

Mr. S. T. Furnell, previously Inside Foreman at Hatfield House Gardens, as Gardener to R. H. FOA, Esq., Holywell Park, Kent.

Mr. F. A. Fitt, previously Kitchen Garden Foreman at Hatfield House Gardens, as Gardener to the COUNTESS OF STRATHMORE, St. Paul's, Walden Bury, Welwyn.

Mr. Bernard Gray, for nearly ten years Gardener and Bailiff to R. H. MICKS, Esq., J.P., Hotham House, Hotham, Yorkshire, as Gardener to SIR PHILIP and LADY CUNLIFFE LISTER, Swinton Park, Masham, near Ripon, Yorkshire.

Mr. Stephen E. Harling, for nearly four years Foreman at Sunningdale Park, as Gardener to MRS. MOORE, The Great Meadow, Castletown, Isle-of-Man.

Mr. Wm. Povey, for the past three years Gardener to R. E. LAMBERT, Esq., at Telham Court, Battle, Sussex, as Gardener to the same gentleman at Roche Court, Winterslow, near Salisbury, Wiltshire. (Thanks for 2s. for R.G.O.F. Box.—EDS.)

Mr. F. Trimmer, for several years in the Gardens at Hatfield House, as Gardener to the LADY MACROBERT, at Colney Park, St. Albans.

CATALOGUES RECEIVED.

C. ENGELMANN, LTD., Saffron Walden.—Carnations.

WM. SYDENHAM, Gayborder Nursery, Melbourne, Derby.—Violas, Delphiniums, Asters, Chrysanthemums, Perennials.

SALE AND SON, LTD., Wokingham, Berks.—Farm seeds.

THOMAS CARLILE, Loddon Gardens, Twyford, Berks.—Hardy plants.

STEWART AND CO., 13, South St. Andrew Street, Edinburgh.—Links and lawn turf; grass seed and manures.

J. SHAW AND SONS, LTD., Wolverhampton.—Governor lawn mower.

T. GREEN AND SON, LTD., New Surrey Works, Southwark Street, S.E. 1.—Lawn mowers, etc.

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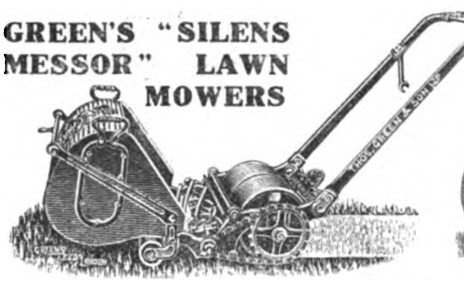

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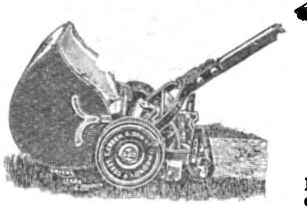

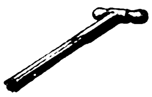

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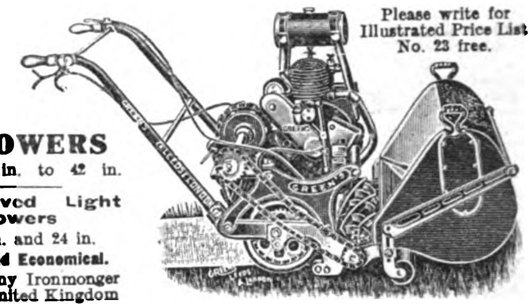

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SINGLES, in 6 colours, very large fine shaped flowers	4/6 "	30/- "
" in mixed colours	3/6 "	24/- "
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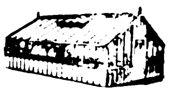

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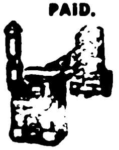

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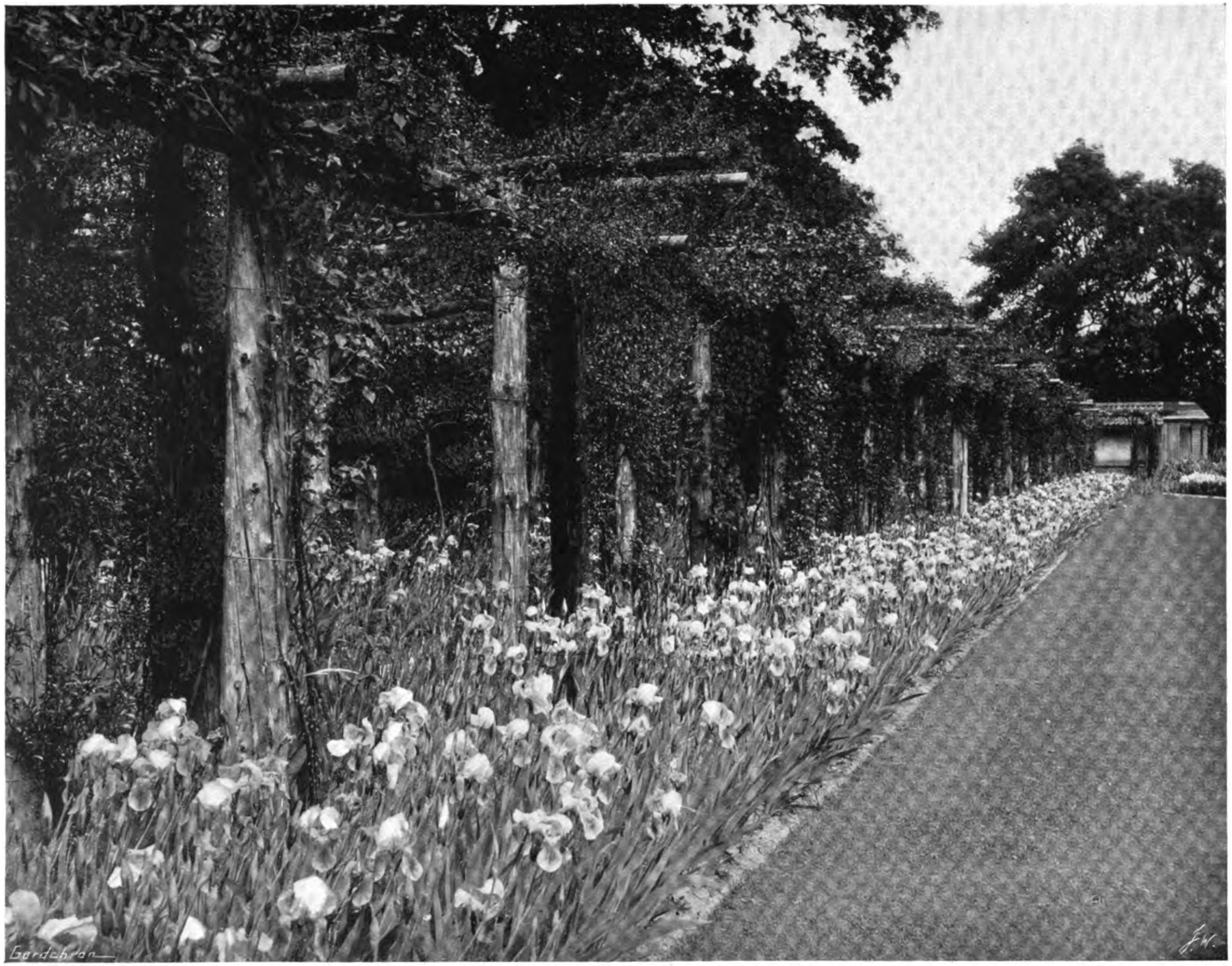
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IRIS KHARPUT BORDERING A PERGOLA.

THE
Gardeners' Chronicle

No. 1993—*SATURDAY, MARCH* 7, 1925.

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Supplementary Plate.
Border of Iris Kharput at Pyrford Court, Woking.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich 41.2°

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, March 4, 10 a.m. Bar. 30·5, temp. 44°. Weather, Dull.

Horticultural Ecology.

A great Frenchman once remarked that "it is easier to learn botany than its nomenclature" and it must be confessed that the paradox contains, like paradoxes in general, no small measure of truth. Botanists, in common with men of science generally, are fond of playing god-father to science, and as Shakespeare has observed, "any god-father can give a name." Yet the introduction of new names for old subjects is not wholly to be deprecated if it directs attention and focuses it more definitely on the subject. Such a justification may be claimed for the recent introduction of the term ecology into botanical terminology Every botanist is of necessity more or less of an ecologist and has, perforce, to consider how plants live their lives in the household of the world, and in what ways changing conditons of the world are reflected in changes in the plants therein. Nevertheless, it has to be confessed that before the enthusiastic band of modern naturalists insisted again on the importance of considering plants in relation to one another and to their general environment, the naturalist was growing out of fashion among botanists. There is the classical and, perhaps, apocryphal story of the great systematist who, when a new and difficult living plant was brought to him was wont to exclaim, "don't bother me with that . . . . take it away and dry it!" Hence, in spite of the formidable wordy entanglements with which some ecologists have sought to beset the path of those who would approach their stronghold, the ecologist must be welcomed among botanists and horticulturists as one who opens windows in stuffy laboratories, lets in a breath of fresh air and a sight of green fields. The gardener has particular reason to follow the work of the ecologist with attention and interest, for it bears on one of the most important and puzzling of the problems with which he has to deal—the choice of varieties. Varieties of fruit trees—top and bush—are well nigh innumerable, and the kinds of the chief sorts of vegetables are of embarrassing richness. Local custom is a useful guide. Seedsmen's recommendations are in general no less useful. Trials at Wisley are valuable, but even when all the sources of information are explored and the results applied, it still remains a fact that only after many years of close observation and experience may a gardener be sure which varieties are, in point of fact, most suitable for cultivation in his garden. And even then the knowledge is only true on the average. In some years well-proved varieties fail even when growing in districts wherein they have been wont to give excellent results. All these facts are but examples of the truth that "life is a relation between the living thing and its environment." Success in cultivation is only achieved when the plant finds itself in a congenial environment of soil and climate, or when the gardener—manifesting the genius of his craft—modifies the environment so that it is rendered more congenial to the plant. This being so, it follows that experience to be of sure value must be local. It is not enough to know that a given variety does well somewhere else. That is only, as it were, a certificate of general good plant character. On the basis of it the variety may be given a trial; but the trial alone can show whether it is a variety suitable for the new locality. Good gardeners are, of course, fully alive to the necessity for constant variety testing, and like the Ephesians are always "seeking for some new thing;" yet it is not to be doubted but that the gardens of this country contain a vast number of varieties of fruit trees and bushes of kinds imperfectly suited to their surroundings. Nor is it surprising that this should be so. The soil and climate of Great Britain are, like Cleopatra, "of infinite variety," and it is not until after an extended trial that a promising variety may be proved to be suitable or not. The problem of "the right plant in the right place" is being attacked systematically, as witness the fruit station at Wisley and the intention of establishing subsidiary fruit stations. More, however, might be done in this direction, and we would suggest to the Royal Horticultural Society that it would increase considerably the value of the vegetable trials—which it conducts with so much care and with such success—if at the conclusion of each, steps were taken to extend them by subsidiary trials on different types of soil and in different kinds of climate. Trials of this kind should not be expensive or very difficult to organise. Experienced gardeners are able to judge without elaborate measurements which of several varieties is doing best.

A striking example of the importance of ecological considerations and the value of comparative trials of varieties is cited in the course of a contribution on agricultural ecology made by Mr. W. S. Gray to the *Journal* of the Agricultural Education Association.[*] The cereal-breeding station at Svalof raised three varieties of Wheat containing the high productivity of Squarehead's Master with the cold-resisting properties of local Swedish Wheat. Trials showed that of the three varieties, one, Pansar, was suitable for the southern, another, Sol, for the central, and the third, Thule, for the northern Wheat district of Sweden. In its proper place, the southern district, Pansar beat all competitors; but further north it was out-distanced by Sol, which, in turn, when grown further north, yielded less well than Thule. Science becoming alive to the complexity of behaviour of living organism, is fast approaching the time when it will be able to lend powerful aid to the cultivator; so long as men of science failed to realise these complexities they were prone to generalise on limited data, and their generalisations were useless because they were false. Ecology, in insisting on the study of plant and environment and in analysing the ways in which environmental factors affect plant development, is doing a good service both to botany and horticulture.

Our Supplementary Plate.—The pergola with a border of Irises running the entire length, depicted in the Supplementary Illustration, is in Viscount Elveden's interesting garden at Pyrford Court, Surrey. The Irises are of the variety Kharput, which is also known as Italia, one of the May-flowering Bearded Irises, growing about three feet tall and producing flowers of very large size, with violet standards and rich purple-violet falls. Although this beautiful Iris received the R.H.S. Award of Merit so long ago as June 7, 1910, it is still one of the choicest sorts of its section in cultivation and the beauty of a long border of this variety may be well imagined on reference to the illustration. The plant is of vigorous habit and grows some three feet tall. Iris Kharput was raised by the late Sir Michael Foster and although the parentage is not definitely known it is presumed to be a hybrid between I. germanica and I. pallida. In late spring and early summer, when the various subjects clothing the pergola have put on their fresh foliage and commenced to bloom, this part of the gardens at Pyrford Court is very delightful and even when the flowers of the Irises are over the stately green foliage is in itself attractive and remains so throughout the whole season. Pyrford Court is in the vicinity of Wisley, and those visiting the R.H.S. gardens and have the time to spare should inspect those at Pyrford Court. They would be sure of a welcome from both Viscount and Lady Elveden, who are keen garden lovers, and if they are absent Mr. Auton, the gardener, would find pleasure in showing visitors the many beautiful garden features.

York Gala, 1925.—It is with very great pleasure we learn that the York Flower Show and Gala will be held during the present year. At the adjourned meeting of the Life Members of the Grand Yorkshire Flower Show and Gala, Mr. T. G. Hodgson, the veteran chairman, made a strong appeal for the continuance of the York Gala and expressed the opinion that if the show was not held during the present year the long sequence of fine horticultural exhibitions would be broken for ever. After due consideration, the resolution passed at the previous meeting "that the show be not held" was rescinded. Financial matters were discussed with the utmost care and eventually the members decided to hold the Flower Show and Gala at Knavesmire, which has been placed at the disposal of the Committee for the nominal rent of £10. The Gala authorities have a sum of £1,200 in hand, and figures presented by the chairman showed that expenses could be reduced by £450. Councillor F. W. Terry referred to the very strong opinion in the City in favour of the continuance of the Gala, while Mr. H. E. Bloor considered the City of York lost nothing even though the Society suffered a loss over the exhibition of 1924, consequently the question was whether it was worth York's while to carry on the Gala at a loss, and if the Corporation considered the Gala to be of value to the city, it should show its appreciation in tangible form. The meeting appointed a small committee to draft the necessary deeds for registering the Society as a company and placing it on a sound business footing. A further meeting of members will be held on March 9 to consider the date of the show and other details. We are glad to learn that a great deal of local support has been promised if the Gala is held, and as Knavesmire is near the railway and well served by trams, it should prove a far more desirable site than the one at Fulford where the Gala was held last year.

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[*] *Agricultural Progress*, 11, 1925.

Scottish Sweet Pea Trials.—The invitation issued by the Scottish National Sweet Pea, Rose, and Carnation Society to raisers of Sweet Peas in this country to send new varieties for trial at Helensburgh, has met with a gratifying response. Seeds of new introductions have been received from Messrs. Burpee, Morse and Elliot, United States, while in this country Messrs. Unwin, Stevenson, and Woodcock are supporting the scheme.

Safeguarding the Bulb-Growing Industry.—Speaking at the annual dinner of the Spalding Bulb Growers' and Market Gardeners' Association at Spalding, Lincolnshire, the vice-president, Mr. Alfred W. White, of Hillegom, Spalding, a well-known and very extensive bulb grower, said that he had the permission of Mr. H. V. Taylor, of the Ministry of Agriculture, to tell the members that the Chamber of Horticulture had been successful in placing on the White Paper for consideration in connection with the Safeguarding of Industries Bill, "the non-edible productions of horticulture." He could not promise them they would have a tax on foreign flowers, but it meant that at the proper moment they would have an opportuniiy of stating their case for the safeguarding of their English bulb industry. The Spalding Stationmaster, Mr. H. Dennick, said that last season a quarter of a million boxes of blooms were dispatched from Spalding Station alone.

Flower Culture Among Glasgow Employees.—On February 20 a novel display of Hyacinths and Tulips was provided by the employees of the Caledonian House, one of the large departmental stores in Glasgow. To encourage the social spirit among the employees, Messrs. Copland and Nye have arranged singing and elocution classes during the winter months, and with the object of further developing the scheme a bulb competition was initiated, and the support which it received augurs well for its future success. Prizes were offered in three classes, viz., Hyacinths in glasses, Hyacinths in bowls, and Tulips in bowls, and it was a condition of the competition that the bulbs had to be grown in the warehouse. The entries numbered three-hundred-and-ten, and Mr. John Cairns, of Messrs. Austin and McAslan, who acted as judge, congratulated Mr. Ogg on the success of the movement, and when the prizes were distributed at a meeting in the evening, he took the opportunity of giving a few cultural directions which may prove helpful to employees taking part in future competitions. The difficulty of bringing such a large number of bulbs into bloom simultaneously was reflected in the condition of the flower spikes, as many specimens were past their best, while others were not fully developed. It was the first competition of its kind in the City of Glasgow, and one deserving of encouragement by City employers.

Mr. W. J. Earl.—A Sussex man by birth, Mr. W. J. Earl served his horticultural apprenticeship at Belvoir Castle Gardens under Mr. W. H. Divers, where he received a valuable training in all branches of gardening, as practised in these famous gardens. His next appointment was at Temple Newsam, where he served under Mr. R. Dawes, and greatly extended his experience, especially in the fruit departments. From 1907 to 1910 he was employed as journeyman at Luton Hoo under Mr. A. W. Metcalfe, and here he was occupied in the fruit, propagating, and plant departments. From Luton Hoo he went to Welbeck Abbey Gardens under Mr. James Gibson, where he gained further valuable experience, and became keenly interested in the production of fruits and vegetables for exhibition purposes. He returned to Belvoir Castle to become general foreman, and remained there until he was appointed gardener to Mrs. Arthur Wilson, at Tranby Croft, in 1916. While at Tranby Croft he gained numerous awards, and from 1920 to the end of 1924 he won no fewer than 118 prizes, including three silver cups, two bronze medals, one silver medal, and one gold medal, the latter being awarded for Chrysanthemums at the Hull show last year. Mr. Earl is a clever cultivator and an excellent manager, and therefore possesses the necessary qualifications which recommended him to the Rt. Hon. The Earl of Derby, who appointed him head gardener at Knowsley, to succeed Mr. C. H. Cook when the latter became gardener to His Majesty the King at Windsor.

MR. W. J. EARL.

Adelaide Botanic Garden.—We gather from the Report of the Adelaide Botanic Garden, South Australia, for the year ending June 30, 1924, that the weather was kindly during the period under review, and sufficient rain fell to prolong the flowering periods of Roses, Delphiniums, Phloxes, and many other popular, hardy, flowering plants, while very few really hot days were experienced. Several paragraphs contain reference to the educational value of the legible and correct labelling of plants, and this is especially emphasized in connection with the Rose garden and the display of Dahlias. There are, of course, limits to the extent of an official report, but from the horticultural standpoint, fuller information concerning the behaviour of varieties of Roses, Dahlias, etc., would have proved interesting and useful. Considerable alterations and improvements were made in the Garden during 1923-1924, including the re-surfacing of a roadway eighteen feet wide and nearly a mile long round the Botanic Park. The loss of an old Lombardy Poplar is chronicled; this specimen was eighty-five feet high and "came down without any warning early one morning, but fortunately, caused little damage." It is supposed that this Poplar was one of the trees planted when the Garden was made. A large plant of the Mexican Dasylirion quadrangulatum flowered for the first time in the Garden, whereas D. serratifolium flowers frequently. We learn that the collection of Australian plants has received numerous additions; that Mimosa bloomed profusely, the species named Acacia podalyriaefolia giving a fine display in June; that Nelumbiums, Nymphaeas, and Japanese Irises contributed largely to the floral attractions, and that the British Nuphar luteum grows so freely as to become a nuisance in the various areas of water. It is an excellent sign of the usefulness of the Adelaide Botanic Garden and of the enterprise of local authorities in South Australia that the latter frequently visit the garden for the purpose of discovering the best trees for planting in streets and parks. The Type Orchard attached to the Garden serves a very useful purpose and contains collections of Apples, Pears, Japanese Plums, Raspberries, and Peccan Nuts, and it is interesting to learn that the President Plum, raised by Messrs. T. Rivers and Son, "is well adapted for the district, the fruit being large, of good flavour, and ripening early." Included in the Report are eight illustrations, two of them representing scenes in the Garden, including an avenue of Platanus orientalis, and the other six representing specimen trees. Unfortunately, there are no descriptions of the latter, and a few notes concerning the several species would have added greatly to the value of the reproductions.

Allotments in Scotland.—The allotment movement in Scotland has received a further check during the past year. According to the report submitted at the annual meeting of the Scottish National Union of Allotment Holders on Saturday, eleven affiliated associations have passed out of existence and five have definitely withdrawn, but as six have been added the net result for 1924 was a decrease from ninety-five to eighty-five. Being a war-time movement it was to be expected that the enthusiasm would wear off, especially as the situation of a number of allotments near cities and large towns was inconvenient, while the character of the soil was unsuitable. Altogether the set-back in the past year is estimated at thirty per cent., but the committee believes there are signs that the movement is now settling down on a more permanent basis.

Special Show for Amateurs.—We are anxious that success shall attend the experimental Amateurs' Show which the Royal Horticultural Society will hold at Vincent Square on June 30 and July 31 this year. Readers will understand that the continuance of an exhibition confined to amateurs will depend almost entirely upon the support given to this initial effort, therefore we trust every amateur horticulturist will apply for a schedule at once to the Secretary of the Society, even though at present the applicant may consider he or she has only a small opportunity of exhibiting. The more exhibits and exhibitors there are the greater will be the interest in, and the educational value of the show; moreover, the success of this experiment cannot fail to prove fruitful in suggestions for broadening the basis of a second venture.

The Late Mr. C. Harman Payne.—On Friday, the 27th ult., the remains of the late Mr. C. Harman Payne were laid to rest at Lewisham Cemetery, Ladywell, in the family grave. There was a private service at Wellmeadow Road, attended by all members of the family, conducted by the Rev. B. A. Hurd Barley, minister of the Hither Green Wesleyan Church, who also conducted the service in the Cemetery Chapel and at the graveside. The chief mourners were Mr. Charles Payne, Mr. Frank Payne and Mr. Aleck Payne (sons); Mr. Sam Payne (brother); Mr. Charles Wagstaff and Mr. George Addison (friends); Mr. H. J. Jones who, at the request of M. Phillipe Rivoire, represented the French Chrysanthemum Society; Mr. E. F. Hawes, representing the National Chrysanthemum Society; and Mr. T. W. Sanders. There were many floral tributes in addition to those from the family, including a handsome wreath (containing white Chrysanthemums) from the Officers and Committee of the National Chrysanthemum Society and one from The Royal Horticultural Society.

Legacies to Gardeners.—The late Sir William Earnshaw Cooper, of Castle Carey, Guernsey, bequeathed £500 to his under gardener, Mr. Albert Taylor, and £250 to his under gardener, Mr. John Bartlett, or if the latter is deceased, to his widow.

Appointments for the Ensuing Week.—Monday, March 9: Burnley Horticultural Society's meeting and lecture; United Horticultural Benefit and Provident Society's annual meeting. Tuesday, March 10: Royal Horticultural Society's Committees meet (2 days); Jersey Gardeners' Society's meeting; Newcastle and District Horticultural Mutual Improvement Society's lecture. Wednesday, March 11: Wimbledon and District Gardeners' Mutual Improvement Society's meeting; Sheffield Chrysanthemum Society's meeting; Bath Gardeners' Society's meeting. Friday, March 13: Royal Horticultural Society of Ireland Council meeting; Orchid Club meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Autumn-planting Potatos.* On the 9th of August, 1849, a few Potatos, the growth of the previous year, were planted in the usual manner in the open air. The stems were protected from frost by being covered with straw placed over loose stones, which were laid beside the plants. On the 26th of February, 1850, they were dug out, and the produce was abundant. The young Potatos were each larger than a hen's egg, and very good food, being dry, and having the flavour of new Potatos. The kind planted were what are called here "Baronets," and at the time of being planted were cut into four parts. None of the produce showed any appearance of disease. Are you aware of Potatos having been grown in a similar way before, as to time of planting and age of seed? Would you recommend such a course for the purpose of obtaining a very early crop? Would the seed of the previous year be the best for forcing? *Martin J. Ffrench, Cashel, Tipperary.* [In some parts of England this is done regularly for the supply of new Potatos in winter. Old Potatos are best for the purpose.] *Gard. Chron., March 9, 1850.*

Publication Received. *Profitable Bush Fruit Culture.* By J. W. Morton. Ernest Benn, Ltd., 8, Bouverie Street, E.C. 4. Price 2s. 6d. net.

INDOOR PLANTS.

THUNBERGIA ALATA VAR. AURANTIACA.

This is one of the most attractive and decorative of greenhouse climbing plants and deserves to be more widely grown than it is. It is of easy culture, and when grown in pots may be used with most pleasing effect for indoor decoration and for the conservatory.

Plants raised from seeds sown now may be had in flower by midsummer and, given proper attention, may be flowered continuously for three or four months.

Sow the seeds two inches apart in pans filled with light soil, and germinate them in a warm greenhouse. When the seedlings are two or three inches high, place four of them in a six-inch or a seven-inch pot, using a compost consisting of two-parts fibrous loam one-part peat, half-a-part each of leaf-mould and old, hot-bed manure, with charcoal, sand, and a sprinkling of fine grade bone-meal added.

Water the plants sparingly for a few weeks, but maintain a moist atmosphere by syringing on frequent occasions. Fix in each pot four light canes about one yard in length, as supports for the plants, to form an upright column. From the time the plants are making free growth they should not be allowed to become very dry at the roots. When flowering has commenced feeding the roots on frequent occasions with weak liquid manure and an occasional light top-dressing of an approved artificial manure will be beneficial.

Red spider is the chief enemy of this Thunbergia and may be kept in check by using the syringe freely and by careful attention to watering and feeding.

T. alata var. aurantiaca has flowers of a rich orange colour with black tube centres. There are other varieties of this plant and from a packet of seeds of T. alata, varying shades of yellow, cream, and white may be produced, all of them blending with a most pleasing effect. *F. J. C.*

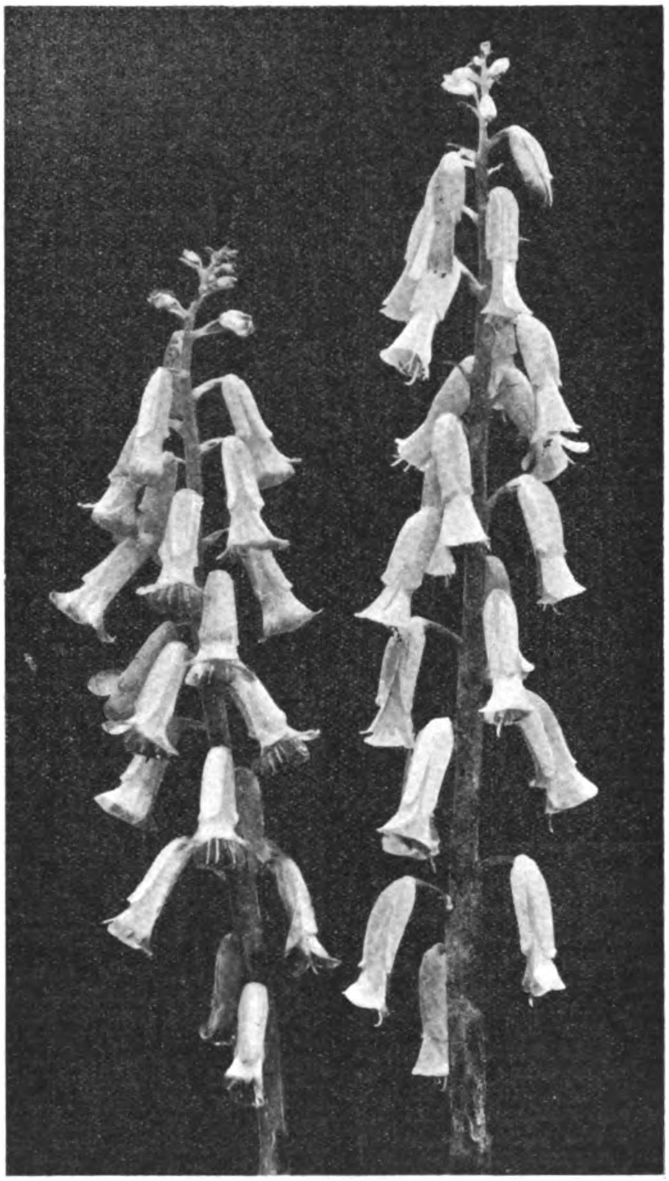

FIG. 60.—LACHENALIA EXCELSIOR SEEDLINGS.

R.H.S. Award of Merit. February 24 (see p. 155).

The Week's Work.

ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart.,
Gatton Park, Reigate.

Vandas and Aërides.—These plants are best grown in pots or somewhat deep pans, whilst Saccolabiums and many of the smaller-growing Angraecums give the best results when placed in Teak wood baskets or shallow Orchid pans and suspended near the roof-glass. Cleanse the plants thoroughly from scale insects which infest the stems and axils of the leaves. From now onwards these Orchids may receive a more liberal supply of water at the roots and a higher degree of humidity in the atmosphere.

Dendrobiums.—Dendrobiums of the deciduous and semi-deciduous sections are now fast pushing forth their flower buds. The plants should be assisted to develop their inflorescences by being given slightly more moisture at the roots and in the atmosphere. The plants will give better results if the flower buds are allowed to swell gradually and without the assistance of much fire-heat; light and sun-heat are great aids to the development of the flowers. One object should be to endeavour to keep the pseudo-bulbs plump, and wherever possible to prevent the new growths from starting. The most suitable time for re-potting these plants is when the young roots are observed to be pushing from the base of the new growth.

Odontoglossums.—Plants of Odontoglossum citrosmum have started into growth, but they should still be kept dry at the roots and should not be disturbed or re-potted now. The new growths should not be unduly excited, by heat or otherwise, until the flower spikes appear in the centres of the shoots, when the plants should be thoroughly watered and afforded more atmospheric moisture. O. grande and O. Insleayi should still be resting in the warmest part of the Odontoglossum house, and will require little or no water until growth becomes active again.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden.
Pyrford Court, Woking, Surrey.

Specimen Plants.—Plants of Fuchsias which have been wintered under cool and dry conditions and are needed for furnishing vases, etc., should now be pruned and grown in a little more warmth. Syringe the plants freely during sunny weather to encourage the development of clean, healthy growth. Fuchsias are excellent plants for furnishing large tubs and vases to stand on terraces during the summer, and they never fail to give satisfaction. Plants of Ivy-leaved Pelargoniums growing in tubs or large pots and trained on wire frames should be attended to. Give the plants a good soaking with water, remove as much soil as possible from the surface and substitute a rich compost. Cut out as much of the old wood as practicable, leaving sufficient to provide young growth for furnishing the frames, and then stand the plants in a house having an intermediate temperature to ensure adequate growth. Zonal Pelargoniums for the furnishing of tubs should be potted on as necessary and kept growing to make strong, large specimens for the purpose. Agapanthus, Hydrangea, Plumbago capensis and other plants grown in tubs for similar purposes should be examined. Re-tub or top-dress the plants as necessary, using a rich compost, and stand them in a light, airy house.

Hardy Annuals.—Those annuals which are usually sown on the site where they remain to flower may now be sown on a carefully prepared surface raked to a fine tilth. Sow thinly and cover the seeds with a slight coat of fine soil. Immediately germination takes place commence to thin the seedlings, allowing room for each plant to develop to its fullest extent.

Supporting Trees. — Particular attention should be given to the supports of young trees until they have become well established. In exposed positions a single stake is seldom satisfactory, and a much better safeguard is effected by using three stakes in a triangular arrangement. By this method also there is less danger of the supports chafing the bark of the trees, which frequently causes irreparable damage in a short time. All ties should be examined before growth recommences to see that the trees have ample space for further development.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam,
Wormley Bury, Broxbourne, Herts.

Orchard Houses..—Bountiful crops of beautiful dessert fruits may be obtained in cold, ungenial districts by the use of cool orchard houses. I prefer to grow the trees in pots as the houses may then be used for flowering plants, etc., during the winter, when the fruit trees are resting out-of-doors. Where the trees are permanently planted in borders they will begin to show signs of growth. Examine the borders for water, and if the soil is dry give it a thorough soaking; this will prove sufficient moisture until after the flowering period. No attempt should be made to force the the trees; keep them as cool as possible for some time to come.

Plums.—Excellent crops of finely-flavoured Plums are obtained from trees in pots; the trees may be moved into the orchard house at this time of the year for starting in a temperature of 45° by night. Admit air when the temperature rises to 50° during the morning, but close the ventilators at two p.m. Spray the trees gently with tepid water and they will quickly start into growth. The following are some of the best varieties for pot culture: Jefferson, Early Transparent, Golden Transparent, McLaughlan's Gage, Kirke's, Coe's Golden Drop, and Late Transparent.

Late Vineries.—To ensure bunches with perfectly finished berries the vines in the latest vineries should now be started into growth. See that they are perfectly cleansed and prepared as advised for those in the early houses. If the border is dry soak the soil thoroughly with tepid water, spray the rods twice daily with warm water, and keep the atmosphere moist. Place another batch of Strawberries on the shelves for succession, and where bedding or other plants are brought into the fruit ranges, keep a sharp watch for green fly and other pests, and lightly fumigate the house to keep everything perfectly clean. Ants are sometimes very troublesome, especially in old houses: a little bisulphide of carbon, sprinkled in their runs and haunts, will keep them in check. The temperature of the late vinery should be 45° at night and 55° in the daytime, when forcing is commenced. Guard against cold draughts when ventilating the house.

Cucumbers.—Keep the recently planted Cucumbers growing in a brisk temperature of 70° at night. Do not pinch the tips out of the leading growths until the plants are in full bearing, but keep the side shoots stopped and tied down, covering the trellis thinly. Pick off deformed fruits so soon as they develop, and use good fruits in a young, fresh state.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George
Holford, Westonbirt, Tetbury, Gloucestershire.

Celsia Arcturus.—This is a pretty greenhouse plant resembling a miniature Verbascum, and of the easiest cultivation. It may be raised from seeds and treated as advised for Nicotiana, except that it will scarcely need shade at any time. It may be flowered twice in the same season, the first time producing one central flower spike. This, on becoming faded should be cut away, and with a little feeding the plants will quickly produce three or more lateral spikes, equal to the first.

Francoa ramosa.—The Bridal Wreath is also a good subject for the cool house, and of easy culture. Plants raised from seeds now could not, however, be expected to flower before late summer or early autumn.

Campanula pyramidalis. — Plants of the Chimney Bellflower which were raised from seeds sown last midsummer should now be ready for placing in their flowering pots. Pot them firmly in a mixture of turfy loam and leaf-mould, with the addition of some old broken mortar rubble. Take care that the crown of the plant is not placed too low in the new soil.

Impatiens Holstii.—Seeds of this orange-scarlet-flowered Balsam, which is a great improvement on the old Impatiens Sultani, should be sown now for summer and autumn flowering. Though it is termed a greenhouse plant it revels in a warm, moist atmosphere, and if afforded liberal treatment will continue in flower for months. Most seedsmen offer seeds of I. Holstii hybrids, which produce a number of varying shades of colour.

Celosia plumosa.—Seeds of this plant may be sown now in well-drained pans. The seedlings are prone to damping off, and preventive measures should be taken in good time. Keep the plants as near to the roof-glass as possible at all times. At the final potting a fairly rich compost and well-drained pots should be provided.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate,
Crawley, Sussex.

Strawberries.—Plants that are being grown on warm borders for early supplies of ripe berries should have the old, useless leaves removed and the border carefully forked over lightly, but not deeply enough to destroy the roots. A dressing of spent manure from an old hot-bed or Mushroom-bed, forked lightly into the border, will be helpful in root action. Where the work of making new Strawberry beds was not completed last autumn or the ground not available, it should be completed as soon as the ground is in a workable condition. Beds on warm borders facing south or south-west and sheltered from cold winds should be dealt with first. The soil should be heavily manured and limed before trenching it two spits deep. Incorporate the manure and lime in the second spit, and allow the soil to settle, when it should be in good condition to receive the plants. The runners should be well established in the pots or boxes in which they were placed last autumn, and wintered in cold frames or where they have been sheltered from heavy rains. In planting remove the drainage materials and arrange the roots evenly, setting the latter in the hole carefully. If grown in boxes they will lift with a ball of soil at the roots. Plant the runners about twelve inches apart and make the ground about their roots very firm When the work of planting is completed, fork the border lightly, and if dry, windy weather sets in mulch between the plants with manure from a spent hot-bed or old material from an old Mushroom bed. The plants comprising the main crop should next receive attention, and if the planting has not been completed this work should be hastened in much the same way as advised above. The runners in this case should be set two feet six inches apart each way. The old bed should be cleared of all weeds and old leaves; the latter should be carefully removed from the plants with a sharp knife unless they are quite dead and part from the crowns easily. A dressing of decayed manure carefully forked in between the plants will help them; do not fork deeply near the crowns to damage them or the surface roots.

General Remarks.—The weather this winter has not been very favourable to such work as pruning, tying, and spraying, and tidying the garden, but by the time these notes appear in print most of it should be completed. Although the winter has been very mild and wet the buds of fruit trees are not so forward as one would expect.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Onions.—When the ground is in a suitable condition the main crop of Onions should be sown. Soil that has been well cultivated and manured should be chosen for this crop. Scatter wood ash and soot over the ground and rake these materials under the surface until a fine tilth is obtained, then draw drills about twelve inches apart and sow the seeds thinly. A few well-tried varieties are Golden Ball, James's Long Keeping, Bedfordshire Champion, Cranston's Excelsior, and Rousham Park Hero, but if I were restricted to one sort I would choose Golden Ball, for I know of no cleaner, thin-necked, better-keeping Onion than this variety. If white and red Onions are required choose Silver-White Globe and Blood Red.

Leeks.—A sowing of Leeks may be made now on a warm border out-of-doors. The plants of this sowing will follow those raised indoors which are now fit for pricking off into boxes. It is well to make one or two more sowings out-of-doors after this one to ensure having Leeks at various stages for kitchen use.

Brassicas.—A warm border should be prepared now for sowing seeds of Cauliflowers, Broccoli, Cabbages, Savoys and Kales. I prefer to sow all Brussels Sprouts in a cold frame earlier, as previously advised. It is well to net the seed-bed at once to prevent small birds destroying the seedlings, and it is necessary to keep a constant watch for slugs and other pests. Dusting the plants occasionally with old soot will be very beneficial to them.

Globe Beet.—Make use of any spare frames for sowing one of the Globe varieties of Beet. Young, early Beets are greatly appreciated in May when salads are not so plentiful as later in the season. Give the plants plenty of room at the final thinning and draw enough soil round those left to make sure that the plants left are quite firm in the soil. Grow the plants sturdily until the warmer days when the lights may be left off in the day time, and more especially when there is a likelihood of a few warm showers, as these are of more benefit than all the watering by a can.

Tomatos.—Make a sowing of Tomato seed now to raise plants for cropping out-of-doors. Sow the seeds in pots or pans and germinate them in a temperature of about 65°, grow the seedlings close to the roof-glass when they are potted singly. It is well to use a well-tried out-of-doors variety for this sowing.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Browallia elata coerulea.—This free-flowering, half-hardy annual makes a most useful addition to the flower garden, and if seeds are sown now in heat the seedlings will make good-sized specimens suitable for planting out-of-doors in the first week of June. Good bushy specimens are obtained by pinching the leading shoots up to about six weeks before bedding out; if treated in this way the plants will grow and flower well throughout the season without support. The companion variety B. elata alba is also worth growing; both varieties are much hardier than many people imagine.

Rock Garden.—In order to give greater variety of subjects, or, as is sometimes necessary, to clothe a bare patch, a few of the following half-hardy annuals will be found very useful. Sow the seeds now in moderate warmth and harden the plants off previous to planting them out in a cold frame. Abronia umbellata, Alyssum maritimum (syn. Koeniga maritima), Gypsophila muralis, Ionopsidium acaule, Mesembryanthemum crystallinum, and Portulacas, the last obtained as mixed seeds or in separate colours.

Culinary Peas.—If the soil is in good condition the next few days will be early enough to make the first outdoor sowing of Peas. The ground may be forked over before taking out the trench, which should be at least seven inches wide and not more than two inches deep; the depth may be increased slightly later in the season. Space the seeds equally apart, and on heavy soils sow more thickly than is the practice later in the season. To ensure a regular supply for the kitchen, make successional sowings every ten days or a fortnight. Just how long these successional sowings should be continued depends on the district; here we have gathered pods from Peas sown on June 14.

AZALEA ALBERT-ELIZABETH.

No doubt many visitors to the meeting of the Royal Horticultural Society on February 24 missed seeing an interesting plant exhibited by Lord Lambourne, the Society's President. Unfortunately, heavy rain fell during the greater part of the day and the light was so obscured that even those who saw the specimen of the Azalea Albert-Elizabeth may not have been attracted by it because very clear light is necessary to bring out the carmine edging and markings on the large, semi-double, white flowers. This new Azalea was raised by Messrs. J. B. Haerens and Henri Wille, Somergem, St. Amondsburg, near Ghent, and first exhibited by them at the great Ghent International Horticultural Exhibition held in April, 1923. So many Belgian growers are Azalea specialists, and therefore they do not greet a new variety with a flourish of trumpets unless it is quite distinct from known sorts and shows evidence of becoming popular. It may be admitted that Belgian tastes do not always accord with British tastes in horticultural matters, nevertheless the critical perceptions of Belgian Azalea experts must receive due consideration, and the fact that Azalea Albert-Elizabeth was awarded the Sander Memorial Cup offered for the best new plant at the Ghent Quinquennial Show of 1923 is an indication of its merit. This variety, as its name implies, was dedicated to King Albert and Queen Elizabeth of the Belgians, and combines their Majesty's christian names. A large number of plants of this Azalea was exhibited at Ghent, and the group was illustrated in *The Gardeners' Chronicle* of April 21, 1923 (Fig. 95, p. 211), and on the opposite page the Sander Memorial Cup was figured. The specimen figured herewith (Fig. 61) does not represent Lord Lambourne's specimen, but it illustrates a specimen of similar size and shows the free-flowering habit of Azalea Albert-Elizabeth.

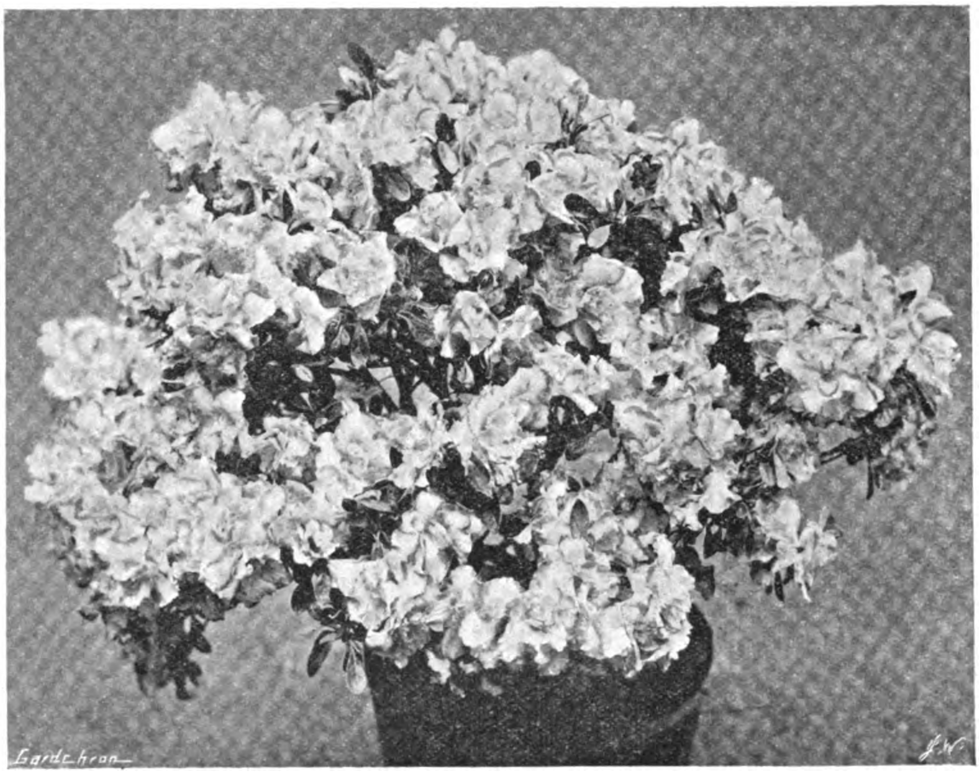

FIG. 61.—AZALEA ALBERT-ELIZABETH.

NOTES FROM WISLEY.

An important section of the Berberis family is now commencing to flower. The shrubs which form this group are distinguished by their elongated black fruits and their evergreen foliage, and although their berries cannot be compared for beauty with those of the B. Wilsonae and B. polyantha hybrids, their foliage is handsome at all seasons, and particularly in the autumn, at which time the older leaves of many species turn bright red.

A goodly collection of these evergreen Barberries is to be found at Wisley, and one of the best is Berberis verruculosa, which grows very compactly and would surely make an excellent hedge plant. Another fine evergreen species is Berberis insignis, which has large, lanceolate leaves. At present it is very uncommon. Good specimens of the now better known B. Gagnepainii, B. Sargentiana, B. Hookeri, B. Juliana, and the Holly-leaved B. Bergmanii, which belong to this group, are to be seen in the gardens. Here also is a handsome evergreen Berberis of this section which is now about nine feet high, and which has not been identified. No fruits have been seen on the plant, and the flowers have always been nipped in the bud by the spring frosts.

Many other shrubs are now in flower, such as Grevillea thyrsoides, G. sulphurea the Vanilla-scented Azara microphylla, and Cornus Mas. The last named bears balls of tiny yellow flowers which come out before the foliage.

In the wild garden a few blooms are showing on the Camellias, while in the field garden newly planted Heaths are making a brave show for their first year. Among these are some interesting varieties of Erica carnea, including James Backhouse, Queen of Spain, and E. carnea Vivellii, which has bronze foliage. There is also the white form of E. mediterranea and masses of E. darleyensis. A good show of the latter is also to be seen on the rock bank in front of the laboratory.

In the frames by the alpine house many more Crocus species have come into bloom, such as C. Tommasinianus, its dark variety C. T. purpureus, with C. Adamii, which more nearly approaches a pure blue than any other species. The Crocus species planted in the open ground are also flowering well. among the best are Crocus Sieberi, C. Imperati, C. chrysanthus var. Siskin, C. etruscus, and the pretty, lilac C. corsicus.

At the top of the rock garden occasional flowers of Lithospermum Heavenly Blue are visible, near to which are some Eranthis hyemalis and the more striking E. Tubergenii. Many other spring flowers are in bloom, and patches of such plants as Galanthus Elwesii, Narcissus cyclamineus, sweet Violets, and brightly coloured Primroses help to brighten the hitherto dull ground. A plant which will not be in flower for some time, but which at present is an attractive feature of one of the recesses at the foot of the rock garden is Meconopsis Wallichii rufo-fusca. Its leaves, which form a rosette, are covered with, long, yellowish-brown, silken hairs, and these hold drops of water which sparkle in the sunlight.

Numbers of perpetual-flowering Carnations are now in flower under glass at Wisley. Some of the best varieties are West Hall Scarlet, Thor, Nigger, and The Herald. The last-named has been a very consistent bloomer. An interesting fancy variety is Jazz, which is yellow, flecked with red.

The Council of the Royal Horticultural Society has now considered the results of the Wisley School of Horticulture Diploma marks, and a Diploma has been awarded to Mr. N. Catchpole, Mr. R. H. Atkinson, Mr. R. A. Holland, Mr. F. J. Lambe, Mr. J. Birkentall, Mr. J. W. Ewan, Mr. F. H. Carr, and Mr. V. L. Bishenden. The Nicholson prize for observations has been awarded to Mr. N. Catchpole, and a prize for etomological collections to Mr. J. W. Ewan. *J. E. G. White.*

TREES AND SHRUBS.

OZATHAMNUS ROSMARINIFOLIUS.

But for a want of hardiness in many places Ozothamnus rosmarinifolius would be a general favourite with all who love beautiful shrubs. Although the plant is hardy in numerous parts of the country, it requires the protection of a wall in most places, and against a dark stone or red brick building is quite charming, with its small, evergreen leaves and its multitude of exquisite little white, Daisy-like flowers.

If grown in a warm, sheltered place, where cold winds will not harm it, it may be cultivated with considerable hope of success.

I grew it for some years on a south-west wall in a garden a considerable distance north of the Tweed, and it only succumbed to the effects of a specially trying winter, in which many shrubs, reputedly hardier than the Ozothamnus, were either killed or badly crippled. It comes from Australia and this, in itself is sufficient to give one some suspicion regarding the hardiness of this very beautiful shrub. It flowers during the summer and gives great pleasure at that season. *S. Arnott.*

CISTUS LADANIFERUS VAR. IMMACULATUS.

Those planting Cistuses this season should not overlook the subject of this note for it is undoubtedly one of the most beautiful of the race, and one that I should have no hesitation in placing among the best half-dozen of the genus.

Though practically identical with the type in every other respect, the flowers of C. l. var. immaculatus are unblotched. They are also larger than those of the parent species, often being five inches across. The petals are exquisitely crimped, very delicate in texture, and of the purest snow-white.

This variety is quite as robust as the typical plant, which means that in a free, warm soil it will withstand up to 20° of frost. It is easily raised from cuttings, struck in a cold frame in August, and grows rapidly, soon making a slender-habited bush of about five feet or more in height

Although C. ladaniferus produces seeds freely with us the above variety has never yet done so.

DAPHNE PONTICA.

No one who delights in flower fragrance should be without the Pontic Daphne, for it has a powerful and refreshing, Lily-like scent which will, especially in warm, showery weather, pervade the air for a considerable distance. The glossy foliage of the shrub, which is evergreen, is a bright and cheerful green; the habit is neat and pleasing, if inclined to legginess, and the plant presents no difficulties to the cultivator.

The flowers, which are produced on the old wood in dense, terminal clusters at the leaf axils, closely resemble those of D. Laureola, but they are nearer yellow than those of the latter.

Though April may be the normal month of blooming, D. pontica is often in flower in early March, and the blossoming period lasts for several weeks.

This shrub will succeed in loam of average quality and may be placed in full sun or partial shade. It is an admirable subject for planting in fairly open woodland or under deciduous trees.

CLEMATIS MONTANA.

Owing to its rapidity of growth, hardiness, and freedom in flowering, Clematis montana is a very popular climbing plant. A young specimen growing on a south wall in these gardens has made very vigorous growth. It was planted in June. There are now four leading shoots about fifteen feet in length besides a number of laterals. The plant was purchased from a nursery, growing in a five-inch pot. A plant of C. montana rubens which was planted near by has made no growth.

Clematis montana may be grown as bush specimens. but constant attention is necessary in the matter of pinching the young shoots throughout the growing season. Dwarf plants about eighteen inches in height and the same in diameter are novel and attractive —in certain positions. A narrow border at the foot of a high wall which was covered with dark-leaved Ivy was made very attractive by introducing bushes of Clematis montana.

DIOSTEA JUNCEA,

This is an interesting shrub, or small tree, which from its Rush-like branches might be mistaken, when not in bloom, for Spartium junceum. It has an elegant, slender habit. carries a few small leaves which are deciduous, and, about midsummer, produces on short, lateral growths little, crowded spikes of lilac-tinted blossoms which are sweetly-scented and, being borne in great abundance, are very effective.

Though a native of Chile, D. juncea, which belongs to the Verbenaceae, is quite hardy. Old plants are apt to become leggy; to obviate this defect the shrub should be planted so that the lower parts will be hidden by others. Notwithstanding its merits and distinctiveness, D. juncea, which was introduced in 1890, is still an uncommon shrub in gardens, *N. Wales.*

THE LENINGRAD (ST. PETERSBURG) BOTANIC GARDEN, 1917-1924.

The following interesting account of the fortunes of the Leningrad (St. Petersburg) Botanic Garden, by Mr. C. Meissner, is translated from the pages of our contemporary, *Die Gartenwelt*:—

On the outbreak of the revolution on March 11, 1917, the upkeep of the Botanic Garden became very difficult owing to lack of labour, the indifference of such workers as were left to us, and want of fuel for the houses. The first disagreeable event of that period was an official intimation to the Director, Mr. A. Fischer von Waldheim, and the head gardener, Mr. C. Bartelsen, that they were expected to "take a holiday"—which meant, in plain language, that after a few months "rest" they might send in their resignations! This left me with the whole burden of the hardy plants and hot-houses on my shoulders—no easy task, with one house a kilometre in length and a park covering twenty-three hectares! And the poorness of the labour I had under me made matters worse; at the least fault-finding one would be asked, "What the devil did we get our freedom for, then?" Practically nothing was repotted that first year of the revolution.

The next disagreeable event was the closing of the Palm House. Coke had been practically unobtainable ever since the beginning of the war, and all the heating depended on wood; and the big Palm House took nearly as much fuel as all the other nineteen houses put together. A large committee of nearly seventy people, representing scientific and gardening interests, and the Government, considered the matter, and decided that the very choicest things *must* be saved, with as many as possible of those of secondary importance, such as Orchids, Succulents, and Cacti, but that the Palms must go. I put off the carrying out of the death sentence so long as I could, hoping against hope that it might not be necessary; however, it had to be. I was able to save just a few of the best Palms in a small house, with some other things; but in the meantime the wood crisis had become even more severe, and nine other houses were closed, containing Chinese and Japanese plants, decorative plants, Bromeliads, Ericas, and many other choice things. The plants from these houses were removed to the other, already overcrowded stoves, where their proper temperature was scarcely ever attained, and they got the very minimum of attention. By this time, instead of twenty-four helpers I had seven; for a whole year I looked after the Orchids almost single-handed, and many of them could not be re-potted, but just had new Sphagnum given them. Many a night I just lay down in my clothes on the bed, getting up three times to look after the houses; otherwise nothing would have survived at all.

Even before 1917, the labour was not up to the German standard, and afterwards, owing to the general relaxation of discipline, the men were even less industrious, and were scarcely at all interested in their work. During the war, moreover, the Garden suffered from the impossibility of obtaining any plants from outside, especially as from 1917 onwards there was no propagating house, so the collections shrank disastrously. Victoria regia Cruziana I was determined to save—I knew the public would never forgive the disappearance of this celebrated specimen—so I had it put into a queer sort of place, like an incubator, devised by myself, which I warmed with a petroleum lamp. I feel sure such a method has never been employed anywhere else.

Since 1922 the collections have begun to increase rapidly, especially after the post began to function normally once more. In March, 1923, I went to Germany to try and get some fresh plants, and thanks to the generosity of the Botanic Garden authorities in München, Berlin, and Breslau I was able to bring back over four hundred living plants, besides another two hundred or so from Messrs. Haage and Schmidt, M. Ernest Benary, and other friends. In the summer of 1924 I again went to the same gardens, and brought back about one-hundred-and-fifty plants for the enrichment of our collections; besides, we were then again propagating, and had in the winter of 1923-4 fifteen hundred alpine and hardy plants propagated, of which more than half struck. Thanks to the support and assistance of the Russian Agricultural Commissariat, we have been granted by the Government the sum of Rs. 150,000 for the rebuilding of the ruined hot-houses, the repairing of the others, and the installation of central heating. The big Palm House had been restored, and fifty Palms, from three to nine metres high, of various kinds installed; these came from the Taurida garden, and from the former palace garden at Tsarskoye Selo.

As I thought the hot-houses were the most important part of the work, the park and the medicinal plants suffered a good deal from neglect; but in January, 1923, we began weeding and re-planting the hardy perennials. The weeds so choked the medicinal and botanical subjects that scarcely a tenth part remained; but they are now being rapidly restored, and we hope in 1925, or at latest in 1926, to have reached, in respect of botanical material, the level of 1913. In fact, in some respects, notably in water plants, we shall be better off then than before the war. Among other losses we mourn that of Stevensonia grandifolia, about 1½ metre tall; Griesebachia pumila, ¾ metre; Pandanus conoideus, about 1 metre; and Chamaedorea scandens and Plectocomia Griffithii, 12 to 15 metres tall, which were broken when the large Palm House was rebuilt, and died in consequence.

Visitors to the garden now are astounded that it looks so well furnished, after all the difficulties we have had to contend with.

RATS IN THE GARDEN.

RATS are very harmful to crops in gardens; they are also destructive to garden and farm buildings, especially those made of wood. These rodents live and breed in accumulations of rubbish, especially in old gardens, from which they are difficult to eradicate.

Rats cause much trouble by their tunnelling and undermining activities in connection with their runs, whether in banks, at the base of trees, near fences or hedges, or in the open. They will also make holes at or near the roots of plants to get at the underground parts, and are, in many respects, as harmful as the mole in disturbing growing plants.

Still more serious is the damage they do to planted seeds, especially Peas, Beans, and similar large seeds; field mice and rats do far more damage than birds in this respect, and are generally the real culprits when the latter are blamed. They will eat such root vegetables as Turnips, Beets, Carrots, and Parsnips, and they are cunning enough to leave no trace of their nibblings.

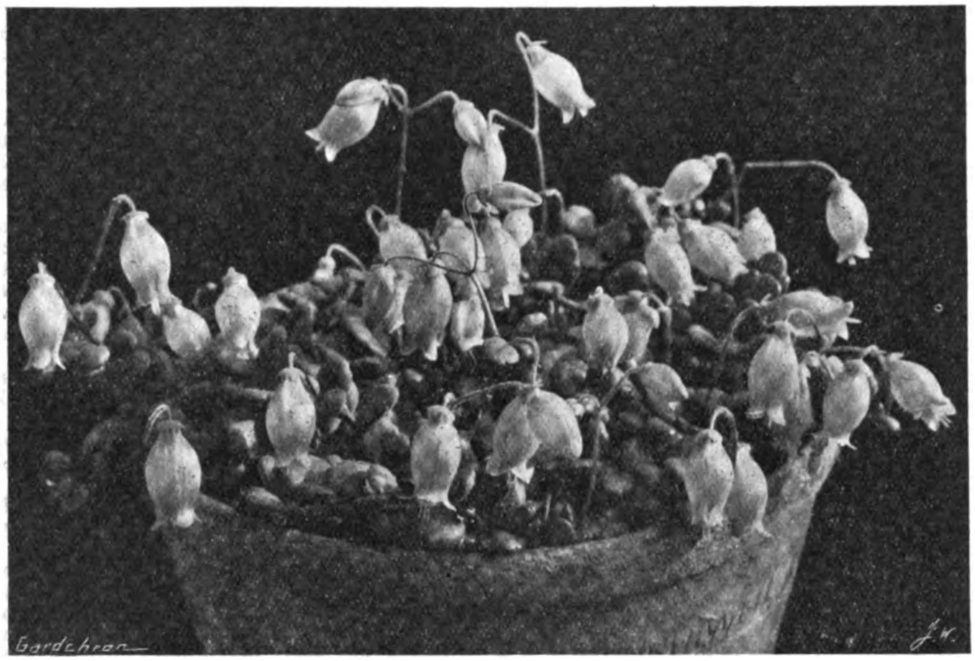

FIG. 62.—KITCHINGIA UNIFLORA.
R.H.S. Award of Merit, February 24, see p. 155.

Though the rat is not generally known to be a fruit eater, its activities not having been often witnessed in this respect owing to its nocturnal habits, it is very fond of all kinds of fruit, eating ground fruits such as Strawberries, and top fruits, when the latter have fallen. Rats also eat Walnuts and other nuts, which come within their natural food in the wilder parts of the country where they are not in contact with civilisation.

Much trouble is caused by the damage done by rats to trees, both in gnawing the bark and roots, as all rodents are fond of bark. It is by the aggregate amount of their damage that rats are so great a nuisance in the garden. The importance of being extremely vigilant and active in the extermination of rats is apparent when their prolific breeding is realised, and it is impossible to exterminate them entirely owing to their migratory habits. In three years, allowing for a high rate of mortality—up to ninety-five per cent., a pair of rats will produce 880 individuals. Black rats breed at four months, brown rats at five months, and there are five or six litters in a single year. One estimate even goes so far as to suggest that a single pair of rats would, in ten years, increase to 48,319,698,843,030,344,720 individuals! A more moderate number advanced by Rucker gives the possible increase of a pair of rats in five years as 940,369,469,152.

There are two principles involved in rat control, prevention and destruction. Preventive measures include rat-proofing of food, or buildings, or materials and drains and sewers. They include the discontinuance of leaving refuse or offal open to the rats, or the making of rubbish heaps in which they can lurk. Methods of destruction include the encouragement of the rat's natural enemies, especially stoats, weasels, the fox, owl, kestrel, buzzard, and other birds of prey.

In gardens, as elsewhere, the use of poisons to kill rats should be adopted only when regard is paid to safeguarding other animals. Various poisons are employed, such as arsenic, strychnine, phosphorus, Squills, barium carbonate, and plaster of Paris. When poison is laid it should be put well inside the hole or burrow.

Many proprietary articles are sold for destroying rats, such as Ratinin, Ratmus, Londorus, Extermino, Ratinol, Rodine, Blackmore's Piedpiper, Sanford's Rat Poison, and Rat Quit. All these are made up in paste form, or with meal as a base, and some attractive scent such as Aniseed, Carraway, etc. The poison should be laid over a large area; for several days dummy bait should be laid and when the rats take this the poisoned bait should be substituted. Spring and autumn are the best seasons for poisoning operations. After one poison campaign lay no more baits for ten days.

A gassing machine is very useful in buildings, being especially effective, and it may be used in runs or banks infested by rats in large numbers. Trapping should follow the use of poisons. The traps should be laid carefully and similar principles followed as when poisoned bait is used. There are three types of rat traps, the iron or steel gin for placing near runs in the open, holes, and burrows; breakback traps and wire cages for use in buildings and similar places. Gins should be laid longways in the run and covered with earth grass, leaves, etc., and in doing this it is necessary to wear gloves or to smear the hands with earth or soil, for rats are very cunning and suspicious. In ditches, gins may be laid under water or just below the surface. There are other ways of trapping, such as with the patent safety traps, like the patent safety mole trap, the trap having a cover over it through which a rat can run. Another form is a snare spring like the old-fashioned mole trap, sprung with a flexible rod and there are many good barrel or tub traps in which rats are drowned by falling in water. In America, a rat guard is used to keep rats away, consisting of a line with bait and tins or tin lids on which the rats slip.

Waterton caught a rat, dipped its lower half in hot tar and let it loose, which caused the rats in the vicinity to leave the district. The wire cage traps are baited on a platform, which closes the doors by a spring so soon as it is touched.

Ferreting is the third method and gives good sport to men and dogs when the rats bolt from their burrows to be killed by the dogs or by sticks. To rid a district of rats all these methods should be carried out successively and systematically. *A. R. Horwood, F.L.S., Maze Road, Kew.*

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

SALPIGLOSSIS SINUATA.

The many beautiful varieties of this plant are ideal for conservatory decoration, and it is surprising they are not more generally grown for the purpose, their neglect being due probably to the fact that their cultivation is by no means easy.

This is especially true during the winter in the immediate neighbourhood of London: in the country where the conditions are lighter their cultivation is much easier. In gardens in country districts the seeds may be sown about the beginning of September, in the neighbourhood of London and other large towns I advise the sowing to be made at least a month earlier to ensure having strong plants before the winter arrives. The seeds are best sown indoors in a cool pit and when they are fit to handle the seedlings should be pricked off into pans or boxes containing light, sandy soil, in which they may remain until they are large enough to be placed singly in thumb pots, using a light, rich compost for this potting. Afford the roots water very carefully at the early stage, but when the plants are well rooted they should be given plenty of moisture. At that stage they should be transferred to large, sixty-sized pots in which they should be wintered; to get them safely through the winter careful watering is essential and they should be grown in a light, airy, position near to the roof-glass, in a house with a dry, buoyant atmosphere. Towards the end of February or the beginning of March they should be ready for placing in their flowering pots; if grown singly, five-inch pots are large enough, or three or four plants may be placed in a six-inch or seven-inch pot. The compost for the final potting should consist of three parts of good, medium, loam, and one of good flaky leaf-mould, with sufficient sand to render the compost open and porous. The pots should be well drained. Water the seedlings sparingly until they are well rooted, indeed careful watering is essential during all stages of their cultivation.

As the plants grow from two-and-a-half feet to three feet tall, they should be secured neatly to very slender canes. The large-flowered, grandiflora strains are best suited to pot culture, and if desired may be purchased in separate colours, which include golden-yellow; blue, pencilled with gold; purple and various shades of red and crimson beautifully veined and pencilled.

SALVIA.

This genus includes several species, which although not annuals, may be treated as such for our purpose.

Salvia splendens and its many varieties, of which no fewer than twenty-four are enumerated in one continental list — are very serviceable for conservatory decoration. From seeds sown during February or March fine specimens may be obtained for late summer and autumn flowering. In my experience varieties come fairly true from seeds; if required true for any particular purpose it is best to propagate the plants by means of cuttings.

The varieties vary in height from dwarf forms, fifteen to eighteen inches tall, to varieties that attain a height of three to four feet, these latter being excellent for forming large groups on the ground, while the former are invaluable for furnishing the plant stages and benches. The varieties vary in colour from scarlet to creamy-white; there are several rose-coloured forms, and one with violet-purple flowers, which makes a very striking group.

Among the dwarf varieties the well-known Glory of Zurich and the newer Harbinger are excellent for furnishing the plant stage and for general decorative purposes.

Seeds may be sown at the beginning of March in a temperature of about 60°. When the seedlings are fit to handle they should be pricked off into pans or boxes, and later on placed singly in small pots. As they increase in size they should be gradually accustomed to a lower temperature, potting them on as they require it, using for this purpose a rich compost, as they are gross feeders and suffer quickly if not kept well fed when they have filled their pots with roots.

The dwarf varieties may, with liberal feeding, be flowered in five-inch pots, but on the whole better results are obtained in six-inch or seven-inch pots, the taller-growing varieties requiring receptacles eight inches or ten inches in diameter.

The dwarf varieties, which come into flower quickly, may be grown throughout in a cool, airy greenhouse; on the contrary the tall-growing forms have a longer growing season, and are best stood out-of-doors during the summer, plunging them in a bed of ashes, or they may be planted out in an open, sunny position, lifting and re-placing them in their flowering pots sometime during September.

During the earlier stages of their growth the leading shoots require to be pinched several times to promote a bushy habit. Salvias are somewhat subject to attacks of red spider, especially if they are allowed to get dry at the roots or are grown in a dry atmosphere. Such attacks may, however, be prevented by attention to cultural details.

Much more serious is their liability to attacks of white fly; this pest can only be prevented by a frequent fumigations with hydrocyanic acid gas or some other approved remedy: unfortunately the plants do not escape this pest when growing out-of-doors, but much may be done to combat white fly by a vigorous daily use of the syringe on the underside of the foliage.

SEDUM CAERULEUM.

This beautiful, half-hardy annual is only three inches in height, therefore unsuited to the ordinary greenhouses; it is however, very charming for the alpine house or small unheated house.

For this purpose seeds may be sown in a cold frame about the middle of September, and again towards the end of February. This plant is best grown in shallow pans, and the seedlings pricked off into pans about three inches to four inches apart. Beyond careful watering and affording the plants a light, airy position near to the roof-glass, the cultivation of this species does not differ from others of its class. *J. Coutts.*

FLORISTS' FLOWERS.

PERPETUAL-FLOWERING CARNATIONS.

The statement made by your contributor, *Colin Ruse*. on p. 91, "that while Carnations will grow well in some gardens. yet in others they cannot be cultivated with success," recalls to my mind an incident which took place here a few years ago, and which may be of interest to other Carnation growers.

The year-old plants which had been flowering continuously from the previous October in a span-roofed house, were moved about the end of August into another house, about one hundred yards away, to make room for the young stock, as the head room in the former house was limited. and a few blooms were being spoiled by pressure against the glass, but otherwise the plants were doing well.

Within a fortnight of their removal the flowers began to wilt and fade in a distressing way, while the buds, of which there were plenty, also showed signs of distress, and to such an extent that in a few weeks we lost hundreds of what would otherwise have been beautiful flowers.

I was at a complete loss to understand what was the cause of this calamity, and only after considerable time had elapsed did I realise it. In the house in which these plants had been growing and flowering for about eight months were two large soft-water tanks, which, in our moist climate, were never empty. These provided ample rain-water for the requirements of the plants, and apparently suited them admirably. but in the house to which the Carnations were removed there was no rain-water, and they had to be supplied with gravitation water of a very "hard" nature (it is so "hard" that difficulty is experienced in raising a lather with the best of soaps), and the result was as stated, which I think is an object-lesson for those who consistently have trouble with their Carnations. *A. T. Harrison, Culzean Castle Gardens.*

HARDY FLOWER BORDER.

INCARVILLEA.

Incarvillea is represented in gardens by some half dozen species, all of which possess decided, if somewhat fleeting beauty.

I. compacta was the first species introduced; it came from North-west China in 1881, and is now rare in cultivation. This Incarvillea is distinctly inferior to I. Olgae, which, sent from Turkestan a year later, has large, trumpet-shaped, rose-pink flowers, on stems from three feet to four feet in height, and elegantly cut leaves.

I. Delavayi is somewhat similar, but with a yellow throat with deeper markings; it makes a good border plant or may be grown on the higher parts of the rock garden. It was introduced from China, and is perfectly hardy.

Perhaps the best of the genus is I. grandiflora, a species of dwarf stature, being less than one foot tall. The large, crimson-carmine flowers, with a yellow throat, are freely produced, and give a very fine effect in the rock garden or flower border during May and June. The blooms are not unlike those of Gloxinias and invariably evoke a full meed of admiration. This is an excellent plant for sunny, well-drained spots in the rock garden. I. brevipes has large, crimson flowers, and is in other respects very similar to I. Delavayi.

Incarvillea lutea is somewhat rare, and has, I believe, rarely flowered in this country; it should, however, be an interesting plant and well worth persevering with. I have had plants, but have not flowered them. These Incarvilleas are easily raised from seeds; they are true tuberous-rooted perennials, but are not, I think, very long-lived.

ANTHERICUM LILIASTRUM.

A native of the alpine meadows of Switzerland, and sometimes found at considerable altitudes, this delightful plant is not now so plentiful in this country as it was in old-times gardens. A. Liliastrum bears white, Lily-like flowers of great purity and delicacy, the deep yellow or orange anthers being an additional attraction; the blooms are rather fleeting, but the whole plant possesses so much charm that this fugacious character of the flowers is not a very serious defect.

The species is figured in *Bot. Mag.*, tab. 378, and had then (1795), apparently, been grown in this country for some years.

Parkinson refers to it thus: "divers allured by the beauty of its flowers had brought it into these parts."

A cool and deep loam suits the requirements of this Anthericum; it does not increase rapidly, but is long-lived and may be grouped in the cooler parts of the rock-garden or in the hardy flower border. *Ralph E. Arnold.*

ANEMONE JAPONICA.

Japanese Anemones are ideal plants for autumnal flowering, and should be planted extensively. They are most charming in effect when associated with perennial Asters (Michaelmas Daisies), Chrysanthemums, or behind the bronzed, autumnal foliage of Chinese Paeonies, etc.

The foliage is leathery, and of a dark green colour. The large, saucer-shaped flowers are produced on stout, erect spikes from two-and-a-half feet to three-and-a-half feet tall, and continue to provide a wealth of beauty from early August until the approach of frost.

All the Japanese Anemones are good "bad-weather" plants, retaining their beauty during the most boisterous winds and rains.

The old white and red varieties are well known, and grow freely in almost all situations, including partially-shaded places. These older sorts are, however, superseded by newer, more vigorous varieties, having larger flowers and also a wider range of colour.

When used as cut-flowers the blooms last well in water and are splendid for house or church decoration.

The culture of the plants is simple: a deep tilth and fairly moist soil are all that are needed. These Japanese Anemones delight in a greater amount of sunshine than the Wood Anemones, and resent frequent transplanting, which should be done from October to March.

The following varieties are the best of the newer sorts:—

White: Beauté Parfait, semi-double; Coupe d'Argent, single; Géant des Blancs, single; Honorine Joubert, the old white variety, a fine plant for naturalising or forming large banks or bays where white is needed; Lady Ardilaun; Lord Ardilaun; Louisa Uhink, a variety of recent introduction, and one of the largest and finest raised, producing large, bold, semi-double, snow-white flowers, on stout, branching stems, over an abundance of olive-green foliage; and Whirlwind, semi-double.

Rose, pink and reddish varieties: Alice, rosy-carmine; Kriemhilde, one of the most graceful of all, and with flowers of a similar colour to the well-known Rose Mrs. John Laing; Lovely, a pretty, semi-double variety, with saucer-shaped flowers; Mont Rose, semi-double; Queen Charlotte, large, glistening pink flowers, and very free; crispa (syn. Lady Gilmour), a variety remarkable for its pretty tufts of crisped or crinkled foliage, much resembling some of the crested Scolopendriums; rosea elegans, elegant Rose colour; and rubra, the old dark-red variety. *W. L.*

ALPINE GARDEN

ARISARUM PROBOSCIDEUM.

There are two species belonging to the genus Arisarum, both natives of South Europe, but while one, A. vulgare, is found in all the countries from Portugal to Greece, A. proboscideum (Fig. 63) is confined to Italy. Here it is found in the shaded woods of the Upper Arno, and also in the Apennines. It is a most interesting little member of the Aroid family, growing only about six inches high, with broad, arrow-shaped leaves three to four inches long and nearly as wide. Under the leaves, which have to be drawn aside to see them, the curious flowers are produced freely in May. These consist of a short stalk, bearing an erect spathe with a long, curved proboscis some five inches in length. The lower part is inflated and pale grey-white in colour, while the upper part is Olive-green and the mouth of the spathe is deep purple. A. proboscideum has a creeping rootstock and is quite hardy in this country. It should be planted in a shady corner of the rock garden in light, well-drained soil. The leaves are produced early in the year, having already attained their full development in February; they are followed later on in the spring by the interesting flowers. A. vulgare differs from the above in having a spathe without the long proboscis, while the root is tuberous and not creeping. *W. J.*

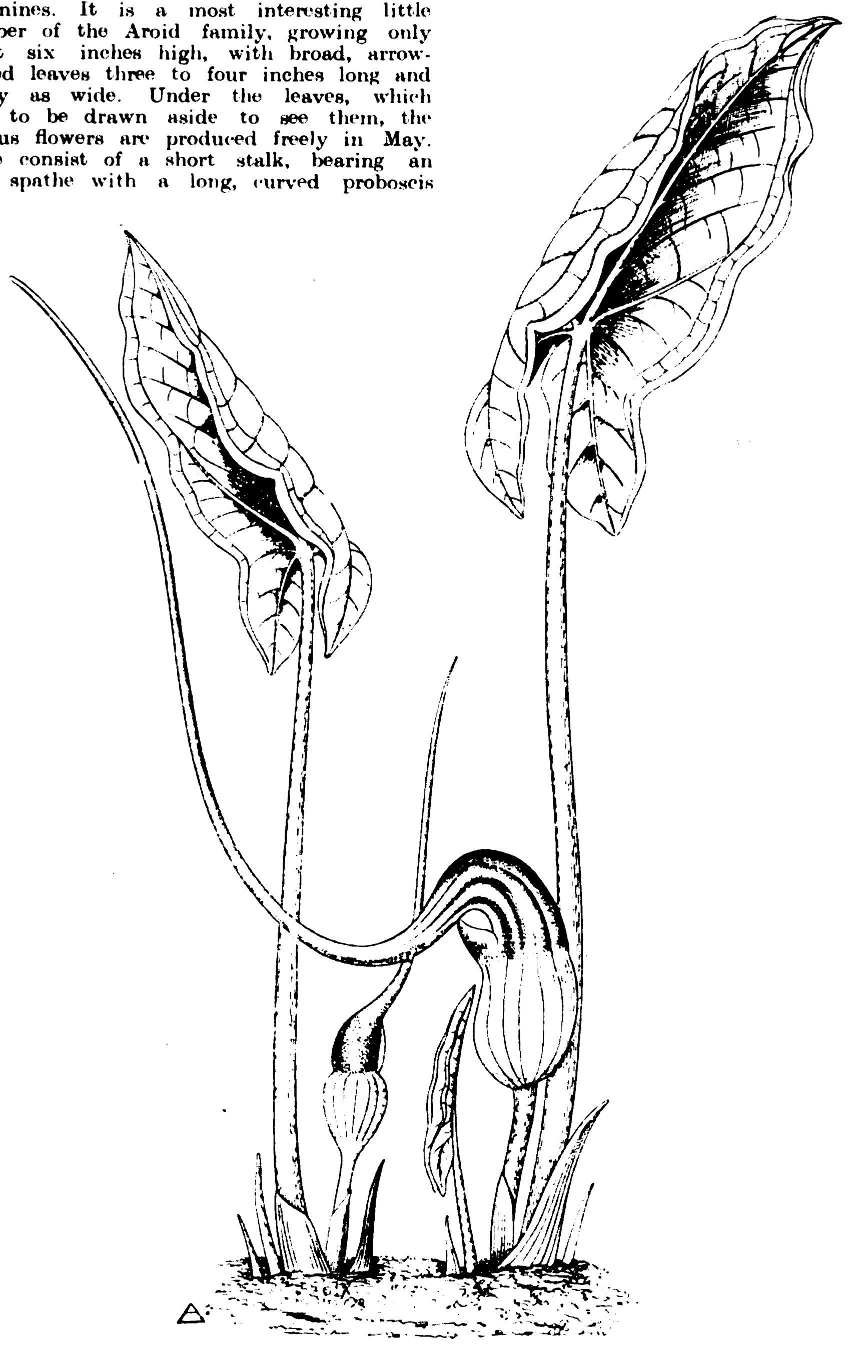

FIG. 63.—ARISARUM PROBOSCIDEUM.

PAPAVER ALPINUM.

A few seeds of this delightful miniature Poppy scattered on a sunny ledge of the rock-garden is by far the best means of ensuring a supply of the fairy blossoms. The plant has not the best of reputations, nor has it a strong constitution, but, sown as recommended, it will often take undisputed possession and perpetuate itself for a number of seasons.

The blooms are like those of miniature Iceland Poppies and their colours range through yellow, orange, pink, and buff to white. The flowers are produced successionally over a considerable period.

Damp is this little Poppy's great enemy, and is often the cause of many of the plants dying during the winter; therefore a well-drained soil should be selected, and for a small colony a sheet of glass may be requisitioned with considerable advantage during a period of damp weather.

P. alpinum was introduced from the Austrian Tyrol so long ago as 1759. *R. A.*

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STOCK AND SCION.

IN a communication made to the ordinary meeting of the Botanical Society of Edinburgh on January 15 last, and subsequently to a meeting of the Edinburgh Natural History Society on January 28, Mr. F. W. Sansome, B.Sc., described a case in which a scion from a green-leaved form of Aububa japonica became variegated when it was grafted on the ordinary variegated form of the species.

The phenomenon of the scion, whether in the form of an ordinary graft or of a bud-graft, assuming some of the characteristics of the stock is, of course, not new; but this seems to be the first recorded case of the kind in Aucuba, and it is an interesting addition to a considerable number of already well-known instances of infection of the scion by the stock.

It may be assumed that in most cases where the stock and scion differ in some important respect some influence is produced upon the one by the other, although, owing to the close affinity between them, in some cases the change may be so slight as to be imperceptible. This influence may, of course, be exerted in different ways. In the case of Apples and Pears grafted on Paradise and Quince stocks respectively, it seems to lie chiefly in some form of control of the vital energies of the scion, producing less vigorous vegetative growth, and promoting earlier fruitfulness. At any rate, this seems to be what occurs in the great majority of the plants grafted on these stocks. But when the same varieties are grafted on "free" Apple and Pear stocks there is no such restriction of growth. In some other cases the stock does not appear to exert any appreciable influence on the scion, as when, for example, the Manna Ash (Fraxinus Ornus) is grafted on the common Ash (F. excelsior), in which the comparatively moderate rate of growth in girth of the scion does not seem to be effected by the much more vigorous growth in girth of the stock. In many other instances the reverse is the case, and the more robust-growing scions maintain throughout life their predominence over their less vigorous stocks, producing in some instances somewhat grotesque specimens. Again, Rose raisers know, although it is not always perceptible to cultivators of the flower, that certain stocks on which they are budded exercise a more marked influence on the scions than others, and many other instances of this might be cited.

As a rule the stock and scion belong to different species of the same genus, or to species of different genera of the same natural order, and it is a curious fact, as was demonstrated by the interesting exhibit of Messrs. James Veitch and Sons at the great International Exhibition in 1912, that although it seems possible to intergraft almost any of the plants belonging to the same natural order, a limit seems to be set here, unless it be the case, as is recorded by Louden in his *Gardeners' Magazine* for 1838 (Vol. XIV, p. 193), on the authority of the American Consul at Malta, that the Maltese, or Blood, Orange is the result of grafting the ordinary Sweet Orange on the Pomegranate, which belongs to a somewhat distantly related order.[*]

But there are also many instances in which instead of the stock exerting an influence on the scion, the later produces a very marked change on the stock. One of the earliest references to an instance of this occurs in an article in *The Gardeners' Chronicle* for 1841 (Vol. I, p. 307), where an account is given of a case where a bud of a variegated White Jasmine was inserted in the bark of Jasminum revolutum, and although the bud did not grow the bark lived and adhered and such was its influence on the revolute Jasmine that it became variegated. A similar case to this is that of the golden-leaved Laburnum (Laburnum vulgare aureum, or chrysophyllum) where, as is well-known to propagators, the golden-leaved scion affects the green stock in the same way, and it is a fact that, as in the case of the Jasmine referred to above, it is immaterial whether the bud grows or not if a piece of the bark adheres, as from the latter as good results are got as if the bud had developed, the whole of the foliage of the green stock becoming golden-yellow. But the remarkable thing about this phenomenon is, not that infection from the bark of the scion should occur, but that afterwards the variegated varieties should so completely dominate the presumably more robust green forms. Be this as it may, however, it is difficult to understand why in some cases it should be the stock and in others the scion which becomes, so to speak, the predominant partner in the union.

As has already been mentioned, in some cases it would appear that no perceptible influence is exerted on the scion by the stock, and *vice versa*. Kerner relates[†] that in the Botanic Gardens at Innsbruck, in 1876 and 1877, buds of Iris Kochii were grafted on I. florentina, and *vice versa*, but the scions were unaltered by the operation. He also relates[‡] that considerably over a century ago, in the Botanic Garden at Vienna, Jacquin inserted a bud from a female plant of Ginkgo biloba into a young male tree of the same species, and from this bud a lateral branch developed. Kerner states that this is now "a mighty tree with a number of branches bearing male flowers, and one large branch bearing female flowers. The notable thing about the tree is that the grafted branch follows a course of development which is obviously different from that of the stock. Every year in the spring it puts forth foliage about fourteen days later than the male branches, and in the autumn its leaves are still green long after the rest have turned yellow and, for the most part, fallen off. From this instance we may infer that the shoots developed from the grafted bud adhere with the greatest tenacity even to individual characteristics, and do not suffer the substratum to affect them even in respect of their annual development."[§] We have a familiar example of the same phenomenon in the case of several varieties of fruit, as for example Apples, grafted on a single stock, which may be a large tree. In such cases each variety seems to adhere to its individual characteristics, but it would be a bold assertion to state that such fruits were in every respect identical with fruits of the same varieties grafted severally on stocks of a different kind, and grown under the same cultural and other conditions.

But of all cases of infection of the stock by the scion, the so-called graft hybrids are the most perplexing, owing to the fact that, in addition to changes which are produced in the internal anatomy and otherwise by the union, flowers more or less intermediate in character between those of the stock and scion are produced sexually. The most familiar instance of this is, of course, Laburnum Adami. According to Schnittspahns, as related by Kerner,[*] "this anomalous form of Cytisus was first produced at Vitry, near Paris, in the year 1826, by a grower named Adam, who inserted a bud of C. purpureus into a stock of C. Laburnum. The shoot, which sprang from the bud, was not a pure branch of C. purpureus, but had characteristics derived both from C. purpureus and from C. Laburnum. Buds for propagating C. Adami were sent from Vitry to gardens all over Europe, and were in some cases inserted into stocks of C. Laburnum, and in other cases into stocks of C. Jacquinianus and C. alpinus. In many cases gardeners grafted buds of C. purpureus in addition to those of C. Adami on to the same stocks, and thus produced shrubs of most extraordinary appearance. Of the branches some resembled C. Laburnum, C. Jacquinianus, or C. alpinus, others Cytisus Adami, and others again C. purpureus; and amongst the racemes were many which bore the ordinary flowers of C. Adami, interspersed with a few blossoms of C. Laburnum, and others in whose flowers a mixture of the properties of C. Laburnum and C. purpureus was apparent. The fact of main interest, however, is that cuttings from Adam's original plant (the alleged graft-hybrid of C. Laburnum and C. purpureus) should bear not only flowers of an intermediate type (as might be looked for in a hybrid), but that on certain branches the flowers break back (or revert) to the pure form of one or other of the parents, or that a single flower should exhibit on one half the characters of one parent and on the other those of the other parent.

Thus the alleged graft-hybrid bears three distinct sorts of flowers, and often parti-coloured combination of the two parent-forms. The anatomical details of the tissues of the Adami-forms have been examined and compared with those of the two parent-forms by Macfarlane. It appears that the tissues show a remarkable mingling of the two parent forms. In some the one, in others the other parent-form predominates. Though in the flowers (*i.e.*, the pure Adami-flowers) the mingling is quite consistent with its being a well-balanced seed-hybrid, in the vegetative regions the strikingly diversified intermixture of tissues is unlike that met with in any seed-hybrid hitherto examined. It should be mentioned that where the Adami-plant bears Laburnum or purpureus shoots and flowers the anatomical characters of these shoots is identical with the normal C. Laburnum and C. purpureus, respectively. Finally, the Adami-flowers never ripen seeds (the ovules being malformed), though when the parent-forms occur upon it they ripen fruit and seed."

Then there are the Crataego-Mespilus graft hybrids, C.-M. Dardari, and C.-M. Asnieresii, which arose from the Hawthorn on which a Medlar (Mespilus germanica) had been grafted, and which appeared in the garden of M. Darnar, at Bronvaux, near Metz. The behaviour of these plants is similar to that of Laburnum Adami, and the correctness of Adam's account of how his graft hybrid was produced seems to have been satisfactorily demonstrated by the production of graft hybrids between other plants by Professor Winkler, of Tubingen[*]

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[*] I have not been able to confirm or refute this statement from any subsequent record.—*A. D. R.*

[†] *Natural History of Plants* (English Translation). Vol. II, p. 571.

[‡] Loc. cit., p. 572.

[§] A few years ago I came across a similar case at Musselburgh, Midlothian. A common Lime had been grafted, at a considerable height from the ground, with Tilia petiolaris, I think. The common Lime stock had been allowed to grow, and when I saw the tree in autumn the branches of the stock were defoliated, while those of the graft were clothed with green foliage. *A. D. R.*

[*] *Natural History of Plants* (English Translation). Vol. II., p. 570).

Another instance of what appears to be an extraordinary graft hybrid is the Bizzaria Orange of the Italian gardeners. This Orange tree, if one can depend on the accounts which have been given of it, behaves in a similar way to other graft hybrids. It was stated by Gallesio (1839) that it bore at the same time leaves, flowers, and fruits identical with those of Citrus Aurantium and C. medica, and also compound fruits in which the characters of the fruits of these two species were blended, both internally and externally; and Kerner mentions[†] that he saw Bizzaria Orange fruits in which "five longitudinal stripes of the colour of a Citron were interpolated in the fruit of the Orange." Kerner also states that the growers maintain that Bizzaria is the result of a cross between C. medica and C. Aurantium, but that the gardener who raised the plant, in 1644, declared it was "a seedling which had been grafted, and after the graft had perished the stock sprouted and produced the Bizzaria." It would thus appear to be a graft hybrid similar in character to those of Laburnum Adami and Crataego-Mespilus Dardari and C.-M. Asnieresii.

As indicated, when buds of variegated forms are inserted in green forms of Laburnum vulgare and Jasminum revolutum the variegation dominates the green colour, and in the case of Aucuba the same phenomenon seems to obtain, but here the infection comes from the stock. In all these cases the modification has been acquired—that is, the change has been brought about in the life-time of the individual, not handed down from a previous generation. It is a change brought about in the *soma*, not, at any rate directly, in the *germplasm*. It is not an inborn variation, and it is difficult to see how it can effect any change in the germ-plasm. It would, therefore, be very interesting to know whether seedlings of green-leaved forms of Aucuba which had been grafted on the variegated stock, and which had taken on the variegation—and assuming, of course, that the plants had been fertilised by their own pollen—would be variegated or green. This could be tested by grafting a few each of the male and female shoots of the green form on variegated stocks, and sowing the seeds produced by them, and possibly it might throw some light on the vexed question—Are acquired characters inheritable? There can be little doubt that seed produced by the ordinary green form propagated from cuttings, provided there was no cross fertilisation, would reproduce the green form, and as the only difference between a cutting and a graft is that the one draws its supply of nourishment (after it has formed roots) from the soil directly, while the other obtains it from the same source through the intermediary of a piece of stem of similar nature to itself, to which it has become organically united—much in the same way as a green parasite like the Mistleto draws its supply of crude sap from its host—the production of variegated seedlings from what were originally green plants, but which have become variegated by infection, would go a long way to prove that they are inherited. *A. D. Richardson, Edinburgh.*

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[*] Bean, in *Trees and Shrubs Hardy in the British Isles*, Vol. II., p. 2.

[†] *Natural History of Plants* (English translation), Vol. II., p. 569.

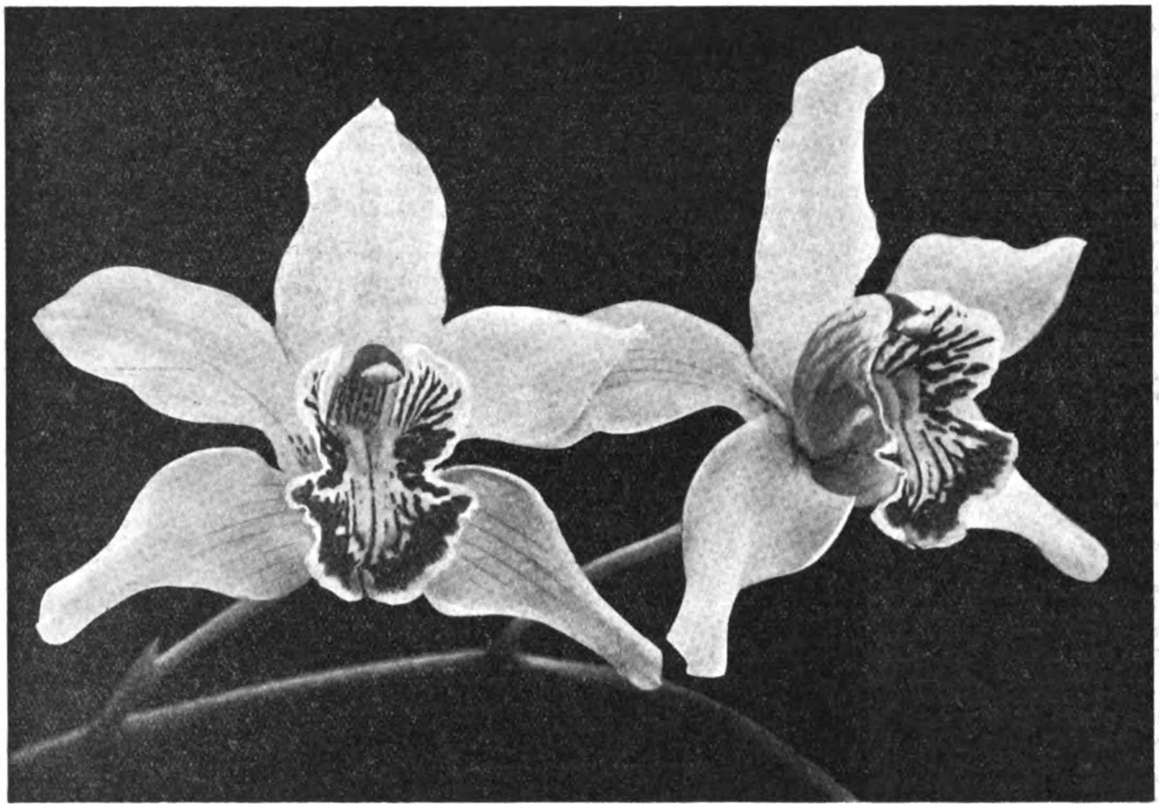

FIG. 64.—CYMBIDIUM REDSHANK.

R.H.S. Award of Merit, February 24, see p. 154.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUMS.

THE great advance made by the introduction of recent hybrids has increased the interest in Cypripediums. As winter flowering plants there are few to compare with them, and considering the long-lasting qualities of the flowers, either upon the plants or in a cut state, it is remarkable they have not become more popular, although in the northern districts their qualities have been recognised for a considerable time.

It is usual at this season of the year to examine all the plants in a collection and repot any that require it, hence a few remarks on their cultivation may be useful to growers. From the cultivators standpoint it is desirable to divide Cypripediums into four sections, namely, the green-leaved section, which comprises by far the largest and most popular group; the tessellated-leaved section; the bellatulum section, and, lastly, the Selenipedium section, which at the present time is not popular.

Cypripedium flowers may be enjoyed the whole year round if members of these several sections are grown. The plants are not fastidious in their requirements provided they are kept clean, and a moist, humid atmosphere is maintained for them throughout the year. A warm, intermediate-house temperature will answer the requirements of all, with the exception of the bellatulum group, which requires slightly more heat and light than the others, and this may generally be provided at the warmer end of the house.

When re-potting the plants it is advisable to mix the compost some little time before it is needed and place it where it may become warm, because potting a plant from a warm house into a cold compost may impose a serve check. A suitable compost consists of two-parts fibrous peat, one part fibrous loam with all the earthy particles removed, and one part live Spagnum-moss, all thoroughly mixed together. The pots used should be thoroughly clean, and sufficiently large to permit the plants to develop undisturbed for one or two seasons.

Water should be applied to the newly potted plants with extreme care until the young roots have entered freely into the new material. When the plants are thoroughly established a liberal supply of water may be given; in fact they must not be allowed to become dry at the roots for any length of time or they will suffer. They must be protected from strong sunshine. It is obvious that many of the present day hybrids with their complex parentage will vary in regard to constitution, and it is advisable to place the weaker growers together where they may receive special attention. The observant grower will notice that some Cypripediums delight in more heat than others, and these should be placed at the warmer end of the house; on the contrary some will thrive best at the cooler end of the structure. Cleanliness is the greatest aid to good cultivation, and the plants should be kept free from insect pests and from dirt deposit on their leaves.

The species, varieties and hybrids of the green-leaved section are so numerous and their colours so varied that there are sufficient to satisfy all individual tastes.

The tessellated-leaved section includes all species and hybrids with tessellated leaves, of which perhaps C. Maudiae is the best known example. These will thrive under precisely the same conditions as the green-leaved section, with the only exception that they are best potted in peat fibre and Sphagnum moss in equal proportions. Being of a less robust nature they are more readily attacked by thrips and other insect pests, hence a closer watch is necessary in their case. Water should be applied to the roots with extreme care at all seasons.

The bellatulum section comprises C. bellatulum, C. niveum, C. Godefroyae, C. concolor, and all hybrids which have one or the other of these species as a parent, and consists of plants of great beauty, and in some cases of difficult culture.

Members of this group of Orchids should be grown in a position near to the roof glass, where they are not likely to receive any over-head water from the syringe, and where they will receive only sufficient shade to prevent them from being scorched by the sun. The compost for these plants should consist of one part peat fibre, two parts loam fibre, the other part made up of lime stone broken finely, and coarsely broken leaves. Pans or half-pots provide the best receptacles, and these should have ample drainage material. Watering should be done with care until the plants are established, but afterwards an abundance of moisture may be given these Orchids the whole year round.

The South American species, now known as Selenipediums, were at one time very popular, and comprise many plants of great beauty, and if such kinds as C. caudatum could be obtained in quantity, as was the case in the past, no doubt there would be a great demand for them.

There are several very interesting hybrids in this section which are deserving of more extended cultivation, but generally speaking, the members of the stiffer, green-leaved section have reduced their popularity, although at the present time there are signs that there will be a demand for these Selenipediums.

These species and hybrids have extremely graceful foliage, and even when not in in flower make extremely ornamental plants. They succeed in the same kind of material as the more popular green-leaved kinds, but delight in rather more air; whilst in full growth they need an abundance of water at the roots, but should be kept slightly drier during the winter months. *J. T. B.*

NOTICES OF BOOKS.

Flowering Trees and Shrubs.

This book* has been writen by Mr. A. J. Macself, and forms No. 8 of "The Home Garden Books," a series in course of publication by Messrs. Thornton Butterworth, Ltd., of 15, Bedford Street, Strand, London, W.C. 2. The work in question is written for amateur gardeners and others who know little about trees and shrubs rather than for tree and shrub experts, or for those who seek scientific information. Chapters are given on such pertinent questions as the utility of flowering trees and shrubs; the proper treatment of trees and shrubs; the formation and planting of shrubberies; flowering shrubs for hedges; shrubs for the rock garden; peat-loving shrubs; propagation, pruning, etc. Sandwiched between these chapters are descriptive lists of trees and shrubs for various purposes. Brief descriptions are given of the various subjects enumerated, with hints on cultivation, but the author would have been well advised to have carried his descriptions to greater length, for some are so meagre that the reader is left without any good idea of the characteristics of the plants. For instance, after devoting a few lines to Spiraea discolor, the author states: "S. Lindleyana grows taller still, and its foliage attains a great size. Its flowers are white, and most graceful and effective, the flowering season being August and into September." The information is not even given that the former has single and the latter compound leaves. Further, under the heading of Ceanothus the author fails to explain the difference between the spring and summer flowering groups, and how the former flower on wood ripened the previous year, while in the latter case the flowers terminate the current year's wood. These defects appear to be the result of the author's desire for brevity, for in writing upon trees and shrubs a great deal of necessary information must be omitted in order to keep the letterpress down to the necessary number of words for a small book. From remarks made under Cytisus the author appears to imagine that C. Dallimorei was raised in Ireland, whereas in reality it was raised at Kew. Apart from such little defects the book contains a good deal of useful information, whilst it is well produced and includes numerous illustrations. Including the index it runs to 224 pages.

The Story of the British Annelids.†

Nothing of a scientific nature was known about annelids or worms prior to 1850, but since then there have been various workers in this field of study. The author tells the story of how he was led to the study of such lowly forms of animal life, and, though he did not commence till 1890, he now claims to have added a larger number of species to the list of British Annelids than any other student of the subject, and has hunted for them in all parts of the British Isles. In this book he has confined himself to the Oligochaeta, or worms with relatively few bristles on their bodies. He brings the list up to forty-five genera, and two hundred and forty-seven species. Most people would place them all under the common earth-worm and the white worm, though enthusiastic anglers have learned to make some distinctions amongst them.

This is not exactly a book for the systematic study of worms, though any good observer could make out a number of the species dealt with by means of the brief descriptions and the illustrations. The book is devoted to the general story of worms, which is highly interesting in many cases, including the laying and hatching of the eggs. The latter grow very much larger after they are laid. Some worms have eye-spots, like organs of vision, and some of them can not only turn when trodden on but can eject a foetid fluid in their defence. The baby worm may be an inch long when it leaves the egg, and is the exact representation of its mother, there being no metamorphosis, as in the case of insects. The blood of worms may be red, pink, yellow, or colourless. The nerve chain and brain are supposed to show a clear foreshadowing of later forms of vertebrate life. Worms can climb trees, walls, fences, or even the water butt, into which they may fall and drown. They may be found in earth, in decaying trees, in rivers, in deep wells of drinking water, etc. Mountain chains are no barrier to them, for the same species may extend from Ireland to China and Japan, the New World, Australia, and New Zealand, as in the case of The Brandling. It has been introduced to many countries, but the author does not specify the countries which were not its aboriginal home. Many people who have no respect for worms would acquire a good deal after reading this book. The illustrations are well done, and both printers and editor have done their duty well. The chief fault, perhaps, is the very frequent omission of the generic name in the text, except for the initial letter, obliging the reader to look up the index under the specific name in order to find the genus.

PUBLIC PARKS AND GARDENS.

The Urban District Council of Hampton has received sanction from the Ministry of Health to borrow £1,350 for allotment purposes and £1,750 for recreation grounds, making £3,100 for the purchase price and estimated costs in connection with the acquisition of land at Mark Hole Lane.

The Salford Corporation Parks Committee is negotiating for the purchase of about eighty-three acres of land in Littleton Road, Kersal, for a recreation ground.

The Urban District Council of Tottenham has made application to the Ministry of Health for sanction to borrow £650 for laying out a children's playground in Downhills Recreation Ground.

The Walton-on-Thames Urban District Council has approved a modified scheme for the levelling of parts of Oatlands Park Recreation Ground for the laying out of tennis courts and bowling greens.

The Ministry of Health has sanctioned a loan of £9,125 required by the Town Council of Felixstowe for the purchase of the Cliff House Estate for pleasure grounds.

The Town Council of Harrogate will proceed with its scheme for the development of the Royal Spa grounds, which includes the laying down of four hard tennis courts and improvement of the gardens, at a total cost of £3,500.

The Ministry of Health has held an inquiry into an application by the Corporation of Hastings for compulsory powers to acquire certain lands required for public walks and pleasure grounds.

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* *Flowering Trees and Shrubs.* By A. J. Macself. Thornton Butterworth, Ltd., 15, Bedford Street, Strand. Four coloured and eight half-tone illustrations. Price 6s. net.

† *The Story of the British Annelids (Oligochaeta).* By Hilderic Friend, author of "British Earthworms"; "The Flowers and their Story"; "Wild Flowers and How to Identify Them." London: The Epworth Press. J. Alfred Sharp. Price 7*s.* 6*d.* net.

FLOWER AND VEGETABLE NOVELTIES.

In estimating the value derived by the community in general, and gardeners in particular, from the introduction of new and improved varieties, strains, and types of flowers and vegetables, we are apt to overlook the part played by the wholesale seed houses. This is probably due to the fact that seed catalogues of wholesale firms do not pass into the hands of the general public, so that only a very few know of the immense amount of work that wholesale houses devote to the raising of novelties, improving the strains of varieties already in general cultivation, and keeping their stocks pure, as well as in searching all parts of the world for fresh novelties of merit to place in commerce.

The wholesale firm of Messrs. Hurst and Son, 152, Houndsditch, E., is one of the best known and most important in Great Britain, and their catalogue this year includes a number of specialities in both flower and vegetable seeds which mark an advance on existing varieties. Of Antirrhinums, now one of the most popular of all garden flowers, they have three sorts of recent introduction and outstanding merit. The variety Exquisite, illustrated in Fig. 66, belongs to the nanum section and has flowers of a beautiful, soft silvery-pink, whilst the broad lip is of cream colour, a delightful combination of shades which will appeal to all who love beautiful flowers. Another fine Antirrhinum named Eclipse, which the firm regard as the best of all the newer varieties, has flowers of a brilliant crimson shade and of large size and stout substance. This particular Antirrhinum has a neat habit and is said to be ideal for bedding purposes. The other variety, known as Ladybird, is described as cherry-pink with heavy white markings on either side of the lobe, and a white throat gives further distinction to the flower.

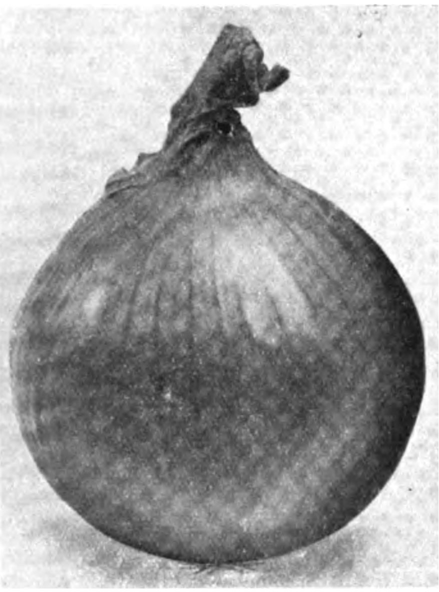

FIG. 65.—ONION IMPROVED MONARCH.

Another very interesting flower novelty is Eschscholzia californica canaliculata Winsome in which the blooms are delicately channelled and fluted. The petals are of a very soft and delicate shade of coral-pink on a cream ground, the tone deepening towards the edges of the petals.

Gilia coronopifolia, which attracted so much attention when it received the Royal Horticultural Society's Award of Merit in 1906, is now obtainable in colours other than scarlet, and seeds of hybrids which Messrs. Hurst and Son are distributing vary in colour from pale pink to rose, terra-cotta, and yellow, whilst in some cases the flowers are flushed and spotted with pink. The new race of Sidalcea hybrids raised by Mr. H. Hemsley, which received a Certificate of Appreciation from the Scientific Committee of the Royal Horticultural Society in July last, are amongst the other novelties being sent out by this firm. The seeds of these Sidalcea hybrids give flowers of various shades of colour, ranging from clear, satiny pink through deep pink to mahogany-red. The plants range from two to four feet high and are in bloom from the end of June to September.

Three fine Cyclamens are included in Messrs. Hurst and Son's catalogue, these being Giant White Wonder, which received the Royal Horticultural Society's Award of Merit in March, 1924; Scarlet King, which is especially recommended for flowering at Christmas time, and giganteum Bath Beauty, a salmon-pink variety bearing very large flowers of great substance well above the foliage.

It is interesting to notice that seeds of Hesperis nivea, which has been known to botanists for some considerable time, but which has only been recently introduced to cultivation, are now obtainable. The white flowers are very sweetly scented and develop in racemes which, when fully expanded, are about one foot long. Their new Nemesia Aurora, a variety bearing carmine and white bicolor flowers, will be welcomed by those who employ this very pretty flower for summer bedding. The lower half of the flower is pure white and the upper a vivid carmine.

Amongst the novelties in vegetables which Messrs. Hurst and Son are offering this year are two new Peas, one a new dwarf early, wrinkled variety named Kelvedon Wonder with dark green, fairly straight, pointed pods, usually developed in pairs and said to be ready for picking considerably earlier than English Wonder; Duplex, a new early main-crop, wrinkled variety, said to be superior in cropping qualities to Stratagem and with pods of large size; and Improved Monarch Onion (see Fig. 65), a variety especially recommended for its long keeping qualities; it is of perfect, globular shape and has a golden skin.

These are only a few of the specialities being sent out by this famous house this season, and as they are all highly recommended by Messrs. Hurst and Son, growers need have no hesitation in trying some of them amongst the few novelties which every keen gardener desires to include in his collection each year.

CERTIFYING NURSERY FRUIT TREES TRUE TO NAME.

Very few things have caused our American fruit-growers more serious difficulties in their young orchards than has the failure of trees to prove true to name. And very few growers, indeed, who have been in the business for any length of time, have been fortunate enough to escape this trouble of confused nomenclature.

As an indication of just how serious a matter this may be, the writer has had the following experience in establishing an orchard of one hundred acres of Apples. Out of sixteen hundred McIntosh trees planted, about seven hundred proved to be Wolf River. Of two hundred Gravenstein trees not one was true to name; and of two hundred Sutton trees all proved to be Scotts' Winter, a worthless variety, except in very severe climates which better varieties will not withstand.

Perhaps this is an exceptional case, but many other growers have had similar difficulties from nursery stock which was not of the variety ordered.

As a result of all this a very careful study of the leaf, bud, and tree characters of Apple trees has been made by Dr. J. K. Shaw, Research Pomologist in the writer's department at the Massachusetts Agricultural College, with the result that he has found it possible to identify different varieties just as certainly by these characters as by the fruit. To indicate the certainty of this method an orchard on the College grounds may be cited, where we are studying the relation between stock and scion. This orchard contains about thirteen hundred trees of many different varieties and combinations where mistakes might much more easily occur than in an ordinary commercial orchard. Yet only two trees proved untrue to name.

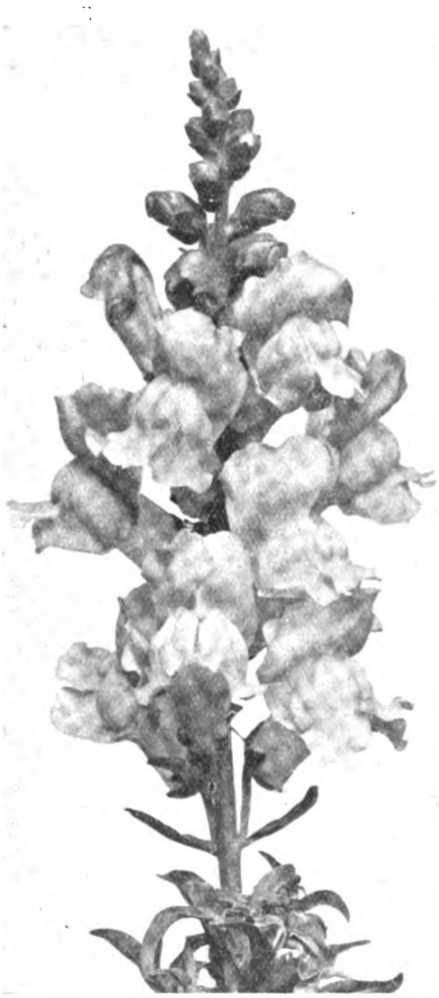

FIG. 66.—ANTIRRHINUM EXQUISITE.

As a practical outcome of this investigation, Dr. Shaw, with assistance from some of the younger men of the department, has begun the work of inspecting young Apple trees growing in the nursery, and either certifying that they are true to name or rejecting them as not true. A small metal tag, which cannot be removed without injuring the tree, is placed on every tree which is found to be true to name. The work was begun in a small way in one nursery in 1921, but has grown very rapidly.

The following table will show how it has developed and the proportion of trees that have been rejected as untrue to name compared with those which have proved true.

Year.	No. trees certified.	No. trees refused.	Total.	No. nurseries examined.
1921	2,580	267	2,847	1
1922	8,437	438	8,875	2
1923	65,910	905	66,815	3
1924	125,609	8,605	129,114	6

It would seem that the time is rapidly approaching when no nurseryman will be able to do business without certifying his trees true to name, any more than a Jersey cattle breeder could sell young stock which might, later, prove to be Holstein or Devon. *F. C. Sears, Massachusetts Agricultural College, Amhurst, U.S.A.*

CIDER AND CIDER FRUIT.

Among alcoholic beverages none is more wholesome than the fermented juice of the Apple, and its popularity is increasing every day. Why a few counties in the south-western corner of England, chiefly Devon, Somerset, Gloucester and Hereford, should have come to be known as the home of cider is more than I can tell, but the fact remains, and the beginning of fruit-growing in the West Country—now an important industry by the way—can be traced to the planting of orchards to produce fruit for cider making. Planting for this specific purpose seldom occurred far outside the counties named, and until recent years little cider was consumed in other parts of the country. So long as I can remember, however, efforts have been made to popularise cider, and I recollect nearly thirty years ago attending a lecture on the subject given in London by that well-known enthusiast, the late Mr. Radcliffe Cooke, M.P. for a constituency in Herefordshire, who was referred to in the House of Commons as "the Member for Cider."

The circumstances of the war did more to popularise cider than all the previous efforts put together, and it came about in this way. Taxation and scarcity put foreign wines outside the reach of many people, and having discovered a substitute in bottled cider they found that it suited their palates equally as well and their pockets a great deal better. It was when beer became high in price and poor in quality that working men turned their attention to cider, in the first place because it was cheaper, and secondly because its alcoholic strength was greater than that of "Government" beer. The beer became stronger and the price was reduced, but the men did not go back to it, because they had learnt to like cider, and some brewers discovered that in certain of their tied public houses the sale of cider exceeded that of beer. This set them thinking, with the result that several brewery companies have now commenced cider-making on a large scale to supply their own tied houses. During the past two seasons there has not been enough fruit in the West Country to feed the cider mills, and hundreds of tons of French Apples, bought cheaply in France in consequence of the low rate of exchange, have been shipped to this country.

Of course there is cider *and* cider, and the sparkling beverage, sweet or dry according to taste, that may be obtained in bottles in high-class hotels and restaurants, seems to have little in common with the cider that is drawn from the wood in every farm-house cellar in the West Country and is offered to you in a two-handled mug whenever you may happen to call. The uninitiated person would prefer the former cider, but the West Countryman dubs it "ladies drink" and likes his liquor fresh from the wood, not so sweet and with more bite in it.

No matter what the cider may eventually become, the initial process of making is the same; the crushing of the Apples in the mill, the pressing of the pulp to extract the juice, and the fermentation of the latter prior to the operation of racking, filtering, and bottling. On very many farmsteads the primitive methods of cider-making are still in progress. In a barn or outhouse there is the mill, in which a heavy stone roller, drawn round by a horse, makes circular journeys round a stone trough, crushing the ripe Apples into pulp; the latter is placed in hair cloths and put into the press, which is screwed down by hand power to extract the juice. For the most part, however, the old stone cider mills have given way to quicker and more up-to-date methods of grinding, and, incidentally, many old stone cider mill troughs now figure as ornaments in paved and walled flower gardens of old-fashioned character.

Except for the grinding and pressing the West Country farmer treats his cider very much as his grandfather did. In the cellar there are rows of hogsheads on their sides, and when they are first filled with juice, the bungs are left out and fermentation goes on. The bubbling and the working of the cider has quite a rhythm about it. When fermentation stops the casks are filled up and bungs driven in, and the next interesting moment is when the contents are tasted, because the greatest difficulty in farmhouse cider-making is to get uniformity.

In the days before the war it was hardly worth worrying about as cider was so cheap, but in consequence of the advance in price and the increased consumption, cider-making is now a good agricultural side line, and it goes mostly from the farmer's cellar—except that which is kept for home consumption—to supply local public houses and private customers.

After all it is the commercial man who has revolutionised cider making, and I think the future of the industry must be in the factory, for the supply of which the farmer will grow the fruit. The commercial cider maker has brought science to his aid, the chemist, the cooper, and the mechanic who provides him with pumps, filters and bottling appliances. The commercial man brings exact knowledge to bear on his cider-making, he controls it at all stages, so that he can produce sweet or dry, still or sparkling cider at will, and for some of the expensive brands most of the same processes are adopted as in the making of champagne. Having produced his cider he next advertises it, with the result that the names of some of the biggest cider-makers are familiar to everybody. Education has done much for cider-making, and at the National Fruit and Cider Institute at Long Ashton, near Bristol (which is supported out of public funds), a band of scientists are busy year in and year out battling with the problems, and they are many, associated with cider-making. I am convinced that by the combination of science and commercialism there is a great future for cider-making. The public has discovered that in pure cider they have a beverage which refreshes while it does not injure, and it is up to the men who grow the fruit and make the cider to see that the incresing demand is fully supplied.

Cider may be made from the juice of any Apples if they contain the necessary acidity, but pure cider Apples are in a class by themselves because they contain the particular properties desired in vintage fruit. These Apples may be seen growing in any West Country orchard, mostly old trees by the way, some of the Apples a bright red, others striped, others a golden-yellow when ripe, and all on the small side. Many of the varieties are known by quaint local names which indicate that they are of local origin, but the titles of others tell that these came in the first place from France, so, in the recent importations of fruit, history is repeating itself. There are a few oustanding varieties—Kingston Black for instance, which is considered by some experts to be the best of all cider Apples, and when I state that certain growers made up to £10 per ton of Kingston Black last season it will be realised that it will pay as well as any high-class dessert or culinary Apple, considering that a well-grown orchard tree may yield half-a-ton of fruit, and all the grower has to do is to shake the fruits off the tree when they are ripe, pick them up and put them into bags.

Quite naturally the improved trade for cider and cider fruit has given an impetus to the planting of vintage varieties, but here comes the rub, the nurseryman does not grow them. Propagation has commenced again, but it takes several years to grow a tree big enough to plant out as an orchard standard, and never before was there such a scarcity of trees of vintage Apples as there is to-day and never such a keen demand for them. In conclusion, cider-making as an industry opens out possibilities for growers of table Apples. There are many well-known commercial varieties—not cider Apples in a strict sense, the juice of which will make palatable cider that will keep if blended as the expert knows how to do it, with good vintage fruit, and therefore the cider mill might take a good deal of the surplus in the shape of small and badly shaped fruits from the market grower, and it can also help to prevent the over-loading of markets in seasons of very heavy crops and glut prices. *G. H. H.*

FRUIT REGISTER.

A PEAR SELECTION.

One is often asked for a selection of the best dessert Pears, but it is very difficult to give a suitable selection, the chief reason for this being that the quality of fruit is in many cases dependent upon the nature of the soil and climate of the district in which the trees are growing.

Here, in the west of England, we find that Williams' Bon Chrétien maintains its reputation when grown on the Quince as an espalier or wall tree, and it is quite satisfactory in bush form.

Louise Bonne of Jersey, gives delicious fruits from trees on a south wall, and it is one of the very few Pears of real merit that will succeed as a standard in orchards.

Marie Louise is excellent when grown on a south or west wall, but it is not so satisfactory in any other form, although it is an indispensable variety in its season.

Beurré Hardy may be described as a general utility Pear; the tree is a regular and heavy cropper, will succeed in any form and in almost any situation. The fruit is of fine appearance and flavour. This variety is probably the best October Pear in this district.

Doyenné du Comice is the best of all Pears when gathered from a warm wall, and is quite good from espalier or bush trees. The tree is not a heavy cropper and should be planted in quantity to ensure a supply of high-class fruits.

Thompson's is best restricted entirely to a south wall, and from such a position the fruits are equal in quality to those of any other Pear, being of rich flavour and with a delicious aroma. This variety fruits very satisfactorily as a cordon.

Josephine de Malines is a magnificent late variety. Excellent fruits may be gathered from bush trees, but the variety will amply repay for the protection of a wall; it is a heavy and regular cropper, and here is the mainstay for use at Christmas and the New Year.

The Blickling and Santa Claus have here proved of excellent quality, both sorts cropping well on a west wall and making vigorous, clean growths. *R. E. Arnold, Cirencester.*

TRIAL OF LETTUCES AT WISLEY.

THE trial of Lettuces conducted by the Royal Horticultural Society under glass at Wisley this winter is valuable in demonstrating which varieties are best suited to forcing, and the results afford gardeners and market growers valuable data in respect of the behaviour of the different varieties of this popular salad both as to the degree of hearting and earliness of cropping.

The trial was conducted in a glass house one hundred feet long, and duplicated in frames. One hundred and sixteen varieties, not all of which are distinct, are included in the trial, and the seeds were sown on September 30, the seedlings being pricked out into boxes and planted finally on November 20. In the majority of cases some ten plants of each sort were grown. The glass house was kept very cool but toward the latter part of the trial the temperature was maintained at 55°.

Some of the sorts are obviously quite useless for forcing in winter and especially those of the Cos type, which show little inclination for hearting and are generally very loose-habited. Those of the American, loose-hearted type are of no value whatever, for they never form a head. They are known as "cutting" or "bunching" Lettuces. The old Iceleaf type of Lettuce to which Webb's Wonderful belongs is also unsuitable for indoor cultivation, although it is splendid in the open, where it forms nice heads. A variety of the Iceleaf type known as Longstanding is another that cannot be recommended, but it is interesting in that the foliage of this sort becomes tinted although the colour is not so pronounced as in the open. This matter of leaf colouring is interesting generally, for varieties which take on a bronzy tone in the open are almost devoid of colour in the glasshouse, although they show it when grown in frames, but not in such a degree as when grown entirely out-of-doors.

The Early Frame type gave splendid results and Early French Frame of two stocks, sent by Messrs. Nutting and Sons, Ltd., and Messrs. Watkins and Simpson, respectively, were awarded First-Class Certificates, while Early Frame, sent by Messrs. Dicksons, Chester, gained an Award of Merit. Early White Spring is of the Early Frame type, but it is not so early in hearting and slightly darker in colour. This variety, however, is very promising in providing a succession to Early Frame, which was ready for cutting on February 17, whereas Early White Spring was not ready until February 24.

Two varieties were sent for trial under the name of Early Paris Market and one other as Early Paris Market Forcing, but all three are distinct. Early Paris Market, sent by Messrs. J. Kelway and Son, was Highly Commended, as was also Early Paris Market Forcing sent by Messrs. Barr and Sons, but this is a smaller Lettuce than Messrs. Kelway's Early Paris Market.

As showing the confusion that exists in the nomenclature of Lettuces, ten stocks of the same variety were sent for trial under four names, namely, May Queen, May King, Queen of the May, and Excelsior, the last from a German source. This type of Lettuce, however, did not attract the Committee favourably and no award was made to any of this type.

Another Excelsior is of totally different habit, being a big, broad-leaved, loose-hearted variety, but of no value whatever for forcing. The same is true of the Lettuces sent in as Chili, Stansted Park, Winter Giant, Paragon, and Wonder of Rotterdam, all of which may be classed as broad-leaved, loose-hearted varieties of similar type, but with no merit for winter forcing, although Stansted Park is a fine out-door variety.

Magnet, a variety of the Golden Ball type was Highly Commended, as was Little Gem, but neither of these was nearly so good as Golden Ball Forcing, which was also sent in as Golden Queen, Early Frame, and Golden Stonehead, the last a Dutch stock. There were five of these stocks, the best of which received an Award of Merit.

As stated, none of the Cos type appears to have any value, and there was only one of promise, the semi-Cos Winter Density, with very dark green leaves, and promising to form a fairly good heart, but this variety is much later in cropping than the Golden Ball Cabbage type. Böttners' Forcing, sent by Messrs. Zwann and de Wiljis, is synonymous with Dutch Forcing, sent by an English firm, a very big Cabbage variety with a large heart, and this received an Award of Merit. Delicacy, which has a great resemblance to Continuity, was Commended. It is slightly tinted, rather less compact than some but with plenty of serviceable leaves.

The Tom Thumb Lettuces are very valuable for forcing, and it will be remembered that in the trial of winter Lettuces out-of-doors a year or two ago they proved very successful. This type of Lettuce has a great advantage in forming very small, compact heads (Fig. 67), so that the rows may be cropped with many more plants than when a larger variety is used, and thus a very large amount of material may be grown on a relatively small area of land, whilst for indoor work this is especially valuable. The Tom Thumb type, which was sent by six growers, received an Award of Merit, and Commodore Nutt, which appears to be a dark form of this type, was Highly Commended.

Another Lettuce which was Highly Commended was Kardoezen from a Dutch firm, a pale green variety of good size with plenty of heart, after the Early Paris Forcing type.

Probably the best Lettuces in the trials were those named Hothouse Premier, Primus Nunhem, and Primus, evidently all synonymous and quite distinct from other Lettuces, for the centre is inclined to be conical rather than ball-shaped and the leaves crumpled; the heads are of very attractive appearance. Early French Frame, to which we have already referred, also received a First Class Certificate, as did its synonym Gotte a Graine Noire from Messrs. Vilmorin-Andrieux and Co. This is quite the best of the true ball-shaped Cabbage Lettuces. Gotte a Chassis, also from Messrs. Vilmorin-Andrieux and Co., of similar type, was Highly Commended.

The duplicate trials in the frames were not nearly so forward as those in the glass-house, but it must be remembered that those in the frames were grown under cooler treatment.

To sum up, the results were as follow:

First-Class Certificates: Hothouse Premier, sent by Messrs. Zwaan and de Wiljis, Scheemda, Holland; Primus Nunhem, sent by Messrs. Nunhem, Limburg; and Primus, sent by Messrs. Sluis and Groot, Enkhuizen, classed together; Early French Frame, sent by Messrs. Nutting and Sons, Ltd., and Messrs. Watkins and Simpson, and Gotte a Graine Noire, sent by Messrs. Vilmorin-Andrieux and Co., Paris, these three also classed together.

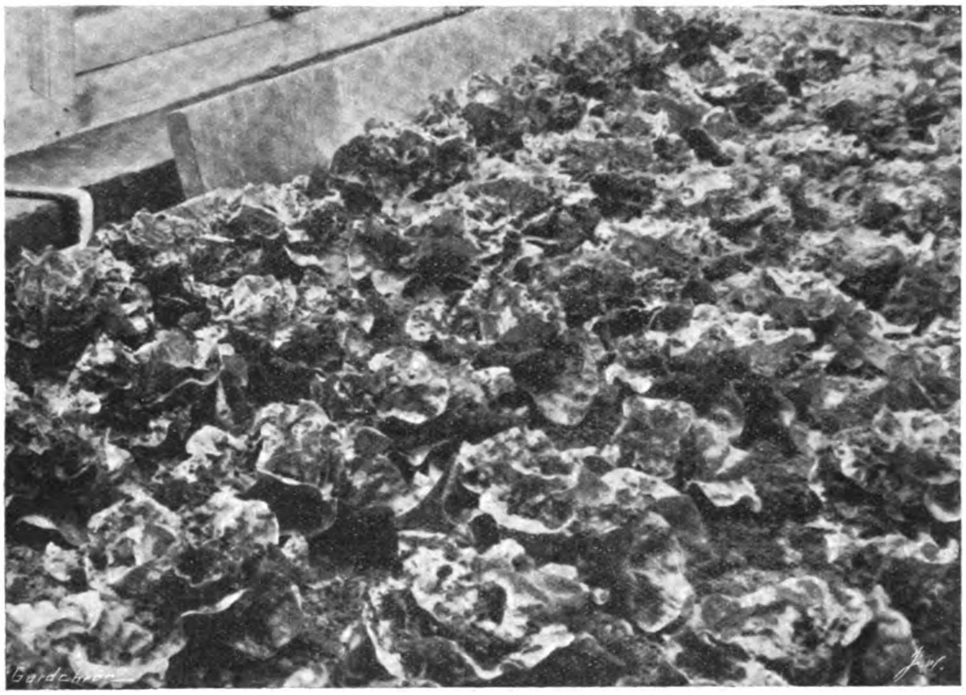

FIG. 67.—TOM THUMB LETTUCES IN THE WISLEY TRIALS.

Awards of Merit: Golden Ball Forcing, sent by Messrs. J. L. Clucas; Golden Queen, sent by Messrs. Nutting and Sons, Ltd., and Messrs. James Carter and Co.; Early Frame, sent by Messrs. Dicksons, Chester; and Golden Stonehead, sent by Messrs. Zwaan and de Wiljis, these five classed together; Böttners' Forcing, sent by Messrs. Zwaan and de Wiljis and Dutch Forcing, sent by Messrs. J. Carter and Co., classed together; Tom Thumb, sent by Messrs. Kelway and Son, Messrs. Toogood and Son, Ltd., Messrs. J. Carter and Co., Messrs. Cooper, Taber and Co., Ltd., Messrs. R. Veitch and Son, and Messrs. Morse, San Francisco.

Highly Commended: Early White Spring, sent by Messrs. J. Carter and Co.; Early Paris Market, sent by Messrs. J. Kelway and Son; Early Paris Market Forcing, sent by Messrs. Barr and Sons; Magnet, sent by Messrs. Ed. Webb and Sons, Ltd.; Little Gem, sent by Messrs. Barr and Sons; Commodore Nutt, sent by Messrs. Sutton and Sons; Kardoezen, sent by Messrs. Spruijt, Utrecht; and Gotte a Chassis, sent by Messrs. Vilmorin-Andrieux and Co., Paris.

Commended: Delicacy, sent by Messrs. Ed. Webb and Sons, Ltd.

VEGETABLE GARDEN.

INTER-CROPPING AND CATCH-CROPPING.

Vegetables which lend themselves to this form of cropping are those which mature quickly, such as Lettuce, Spinach, Radish, Endive, Turnip, Globe Beet, Short-horn Carrot, Colewort, Dwarf Beans, and Cauliflower. In good soil, under congenial weather conditions, and if suitable varieties are chosen, these crops mature very quickly, and may often be grown between the more important crops to be cleared by the time the latter need all the space originally allotted to them.

In some gardens Potatos and Dwarf Beans are forced in large pots, from which Chrysanthemums have been removed. After the Potatos or Beans are planted, the soil is levelled and watered, and a thin layer of fresh soil sifted through a very fine sieve. On this is sown thickly seeds of Mustard or Cress, which may be cleared before the Potatos or Beans appear above the surface, and space is thus saved in the greenhouse. I have obtained three and even four successive crops of Cress from the same pots when the Beans have been grouped in threes, thus lessening the danger of cutting the stems of the Beans when cutting the Cress.

Another very simple method of getting a cheap crop is to sow Radishes with Peas. The Peas are sown in the usual way, but before covering them with soil Radish seeds are scattered thinly along the drills, and the Radishes may be pulled before they interfere with the growth of the Peas. Last year I sowed Runner Beans in a drill, and intended to scatter some Radish seeds along the row. It was getting dusk, and I procured the packet of what I presumed was Radish seeds, and sowed the seeds quickly. As they seemed to handle strangely, I examined them in artificial light, and then found that I had sown Spinach instead of Radish. However, the mistake proved profitable, for we were able to gather several dishes of Spinach from between the Beans. I might mention that in this case the Beans were planted in groups of two seeds at one foot apart, thus allowing plenty of room for the Spinach.

Radishes are frequently sown in the same drills as Parsnips. Besides getting a catch-crop at small expense there is the additional advantage that the position of the rows of Parsnips is seen some while in advance of the time when the Parsnips themselves would appear. That enables the grower to hoe closely up to the line of Parsnips much earlier than could otherwise be done. The Radish seeds may be either mixed with the Parsnip seeds or the latter may be sown first and the Radishes scattered thinly in the drills afterwards. Where the rows of Parsnips are made fifteen inches apart there is opportunity of growing Radishes between the rows if desired. I have frequently sown Radishes in the same lines as Brussels Sprouts, Broccoli, Cauliflowers, etc. The line is set, drills are drawn, and the Radish seeds sown and covered. The plants are then set out, and soon the space between the Brassicas is filled with Radishes.

There is a modification of this plan which deserves mention. The Brussels Sprouts or Cauliflowers are planted at two feet apart in the row and two feet to two-and-a-half feet between the rows. Between each pair of plants is set a Lettuce, and between the rows drills are drawn, and seeds of Radishes, Spinach, or Turnips are sown. If the ground can be prepared some time in advance of the planting of the Brussels Sprouts, etc., it is better to sow these seeds at two feet to two-and-a-half feet between the rows, so that they will be peeping through the soil by the time that the plants are set out. This plan rarely fails to prove satisfactory. Quick-growing Lettuces of a small type should be chosen for this purpose.

If a plot of ground is set apart for Brussels Sprouts and prepared during the winter or early spring it would be possible to crop the ground with some subjects which could be cleared off by the summer, and then leave the full space for the Sprouts. Shallots, Short-horn Carrots, Globe Beet, Spinach, and Lettuce could be employed for this purpose. These would be sown at the same distance at which it was proposed the Brussels Sprouts would be, viz., two feet to two-and-a-half feet. Just before the Brussels Sprouts are planted the ground should be well hoed and the plants set out mid-way between the earlier crops. These smaller crops would be cleared off before the Brussels Sprouts need all the space, and the soil may then be forked over with benefit to the Brussels Sprouts.

Probably one of the most frequent methods of inter-cropping is to plant green crops between Potatos, but I am not greatly in favour of this plan. It may prove profitable sometimes, but more often it means that one or other of the crops will be partially spoilt. It seems to me permissible to plant Brassicas between Potatos just before the early ones are being lifted, but even then it is open to doubt whether it would not be better to wait a week or a little longer and plant after the Potatos have been lifted. It is a feasible plan to choose a time when the Potato tops are completely grown to draw the foliage of two rows together, and then to plant late Cauliflowers or autumn Broccolis in the spaces thus opened. When eventually the Potatos are lifted the other plants will be four to five feet from row to row, and this space might be filled with Coleworts. Such a plan would be possible with early and second-early Potatos.

If it is decided to intercrop Potatos with Brussels Sprouts it should only be done when extra space is allowed to the Potatos. The space between the rows of Potatos should be three feet, and a variety with a moderate amount of haulm chosen. There is certainly a saving of space in this method of inter-cropping, but the grower has to consider whether this gain in space is profitable when the extra time occupied in dealing with the dual crop is taken into consideration.

The plan which used to prevail at one time of growing all culinary Peas on one plot is not now so often practised. It has been discarded for the better plan of setting the Peas several yards apart, and filling the intervening spaces with shorter crops. There may not be a great saving of space in this method but the Peas get more light and air. Where they are spaced six feet apart, which is not too generous, there will be room between the Peas for three rows of Turnips and two of Radishes. The rows of Turnips would be two feet from the Peas and one foot apart. The Radishes would be a foot from the Peas and grown on either side of the Turnips. These latter would be soon cleared off so as not to be in the way. Beet, Lettuce, or Spinach might be used instead of Turnips. Early Peas set at three feet apart also lend themselves to inter-cropping. I have grown two rows of Carrots and similar small crops between the Pea rows, but that is rather too close, and the grower should be satisfied with one good row. Cabbages and Cauliflowers might find a place between the Peas or Broad Beans when the time for planting them arrives.

The space between Celery rows is frequently used for catch crops. More might be done in this respect if the trenches were prepared earlier than usual. The ridges should be levelled and prepared for sowing or planting. In this way I have been able to get two crops before the soil was needed for blanching the Celery. With the rows of Celery four feet apart there was room on the intervening ridge for a row of Spinach down the middle of the ridge, and a row of Lettuces on either side, the rows being one foot apart. The Lettuces were in this case planted instead of being sown on the ridges. When Spinach was used the remains were chopped up with the hoe and Lettuces were planted in their place and cleared before the whole of the soil was needed for blanching.

Beds prepared early for Runner Beans and Marrows might also be used for small crops which would be cleared by the time the growth of the Marrows encroached on them. I have grown Tomatos between Marrows, and planted Lettuces on the outskirts of the bed, with good results.

Another method of making good use of a limited amount of space, is to mix a few Lettuce seeds with those of such crops, as Onions, Carrots, Beet, etc. These Lettuces may be transplanted to make good the deficiencies of the real crop. It is a great advantage to have Lettuces ready for planting, and this little device esures a continuous supply.

Other methods of inter-cropping which I have tried are growing Onions on a new Asparagus bed, with a row of Lettuces on the outskirts of the bed; planting Lettuces between the rows of Tripoli Onions at the time of sowing; and filling the late Onion bed with spring Cabbages and clearing them off as Coleworts, in time for setting out glass-raised Onions on the same bed in mid-April.

The weather, soil, district, and rainfall have much to do with the success of inter-cropping. In some districts there is not, in normal seasons, sufficient rainfall for the purpose, and if the grower has to use tap water for the purpose of being able to sow and plant at particular times the scheme may become prohibitive from the point of view of time and labour. *William F. Rowles, Gallows Hill, Sudbury, Suffolk.*

HOME CORRESPONDENCE.

A Carnation Competition.—The competition recently organised by Messrs. Allwood. Bros., is as confusing and amusing as it is interesting, insomuch as several varieties of Carnation which are grown extensively throughout the country are omitted, and others not nearly so deserving are placed high up in the voting list. As a grower for several years in large private gardens, I venture the opinion that there is no more popular Carnation in cultivation to-day than Baroness de Brienen. For habit, colour, and quality it still holds its own and has stood the test of many years on the market. I wonder if some of the varieties referred to in the competition will stand a like test. I agree with Mr. Grigor Roy that any pink variety of good quality has a better market value than a scarlet one. As a private grower I should be greatly interested in the results of any such competition organised by other leading Carnation growers. *A. J. Turner, Moreton Paddox Gardens, Warwick.*

Yellow Pershore Plum.—In his criticism of my notes on the Yellow Pershore Plum, *Market Grower* states (p. 133) that this variety cropped no better than others during the bad season of last year. I can assure him it did here. The Czar variety was a total failure, and so were most other coloured Plums, but we had a very good crop of Yellow Pershore. I quite agree with what he states about the newer variety, Pershore Purple. This is an excellent Plum and one that will become popular in a very short time if it maintains its present reputation. Growers in this neighbourhood are quite enthusiastic about it, but I do not think they are forsaking the Yellow Pershore entirely. *H. W. Stenning, Ebrington Hall Gardens, Campden, Glos.*

The late Mr. C. Harman Payne.—May I be allowed to add a few personal recollections to the obituary notice in last week's *Gard. Chron.* Our friendship began somewhere about 1906—close upon twenty years ago—when some totally unaccountable force was slowly driving me into a serious wish to possess books connected with the literary and garden history of the Tulip. I must have appealed to him for help in 1908, for this is what I received:—"I have this evening had a little turn out, and send you the result, which is something like what you want" (March 20, 1908). This result was a long list of British, French, and German works dealing *in extenso* with the flower, and a footnote at the end states that "he possessed most of them." In the obituary notice no mention is made of the extraordinary collection of books, great and small, dealing with garden flowers, which he possessed at his death. It is the result of many years of searching old book shops and stands, and of ceaseless scanning of second-hand dealers' catalogues. It is wonderfully rich in what may be called the unconsidered brochures and small books which are passed by on the "other side" as too unimportant to list by the big dealers like Quaritch or Wheldon and Wesley; or which are tied up in bundles as of no value by auctioneers when preparing for a sale. By these I mean such small fry as Dobson on the Pelargonium (1852), The Verbena in Tyas's Popular Flowers (1844), Buss on the Fuchsia (1883), and Grieve on Variegated Zonal Pelargoniums (1868). From all I can learn no such library can be found anywhere but in that small, crammed-to-overflowing room in Wellmeadow Road, Catford. It was his life's work. He specialised in the literature of the Chrysanthemum, and he used to say that he had practically every picture and every book which dealt with the flower. The special silver plaque which was given him in France on the occasion of the centenary celebrations was one of his most cherished possessions, and was awarded to him in a great measure for his pictorial and literary display. Florists and garden-literati (if I may use such a big word) know him best from that useful little book, *The Florist's Bibliography*. The first edition appeared in 1908; the second supplement so recently as June, 1924. The books that are brought together here in what is now a work of considerable size are to be found in no other bibliography. Lowndes, Pritzel, and other authorities will be drawn blank. My old friend was very anxious to make it as complete as possible. Finality is impossible, but he accomplished much. *Si monumentum requiris*—we have it in his unique library and in his unique publication, *The Florist's Bibliography*. He had his failings, and there was a little acidity sometimes in his corrections of less well-informed writer's mistakes, but, at the same time there was within him ever such a deep well full of gladly-to-be-given help, which none in need of facts or advice ever appealed to in vain. No one who has not experienced this help can realise the pains he took over these matters. *Joseph Jacob.*

Birds and Fruit Buds (see p. 142).—To prevent birds destroying the buds of fruit bushes use an ordinary whitewashing spraying machine and spray the bushes with freshly burnt lime and a small quantity of soot to make the spray distasteful. The materials should be mixed with hot water and used at once in a hot state. It will stick to the buds and bark and besides acting as a deterrent to birds, kill all green growth such as moss, also insects infesting the trees. This mixture will not wash off the branches until the bark swells. Being greatly troubled in this respect with birds we adopted this plan several years ago with the best results; this, of course, is an old remedy, but is more effectual, time-saving, and cheaper than any other method. *A. B. Wadds, Englefield, Reading.*

Carnation Baroness de Brienen.—Referring to the remarks made in *The Gardeners' Chronicle* (p. 108) on Carnation Baroness de Brienen by *J. A. Kirkwood*, I endorse his observations, but would add that I have not found the variety so free-flowering as I would wish during winter. A variety which produces its flowers at all seasons is the kind required in private gardens, and Baroness de Brienen fails in this particular respect. *B. Collins, The Warren, Birkdale, Southport.*

Daphne Laureola.—It may be well to point out that the photograph (Fig. 28) given on page 73 of your issue of Jan. 31, does not represent this species. The lobes of the perianth of D. Laureola are much shorter and blunter and the flowers are usually surmounted by a tuft of leaves, causing the inflorescence to be much less conspicuous than that shown in your photograph. The plant, with dissections, is well figured in *English Botany, Tab.* 119. The statement (*Gard. Chron.*, p. 68) that the flowers are odourless is not borne out in my experience, for I find them rather sweet and fragrant; on the other hand, *English Botany* describes their scent as "unpleasant!" The hybrid D. Laureola × D. Mezereum, has been found in a natural state in England (see *Journ. Bot.*, 1903, 230), the discoverer (E. S. Marshall) considering it was probably Laureola ♀ × Mezereum ♂. In this form of the hybrid, the leaves (unlike those of the hybrid described in your issue of Jan. 24, p. 52) were deciduous, somewhat thicker than those of D. Mezereum, and shining. The flowers were glabrous as in D. Laureola, but the tube was often reddish-tinged. I trust the flowers of the Kew plant will be closely examined in regard to colour, shape, scent, clothing, etc., and the results reported in your pages. *C. E. Salmon, Pilgrim's Way, Reigate.*

Onion Cranston's Excelsior and Ailsa Craig.—I did not intend to enter the controversy in regard to Cranston's Excelsior and Ailsa Craig Onions but the note on this subject from Mr. Gregor Roy seems to me to call for a reply. There is no doubt about the difference between the two varieties. They are absolutely distinct. Some show schedules have classes for both varieties, and I have often disqualified an exhibitor because he showed Cranston's Excelsior when Ailsa Craig was called for and *vice versa*. This was unfortunate for the exhibitor who, no doubt, was the victim of some seedsman. I would refer Mr. Roy to the result of the Onion Trials at Wisley in 1923, published in Vol. XLIX, part 2, of the *Journal of The Royal Horticultural Society*. In the introduction to these trials it is stated:—"It will be apparent from the notes which are given below that Onions of more than one type are being distributed under a single name. This is particularly the case, perhaps, with the popular Ailsa Craig, and is greatly to be regretted." The leading award in the Ailsa Craig type was given to a variety named Premier. The trial report is:—"Premier (Dickson and Robinson), A.M.—Bulb large; solid: outer skin pale straw, inner white. Of Ailsa Craig type. A very good stock. Crop 26¾ lb." We then come to Ailsa Craig, which was Highly Commended. The note reads:—"Ailsa Craig (Morse), H.C. Very similar to last, but an earlier stock and bulbs not so large. Crop 22lb." No purpose is served in attempting to depreciate the work of Mr. Murray. The raiser of Ailsa Craig did splendid work in introducing that variety into commerce, and it rapidly became the most popular of its class. It is by expert selection of this character that progress is made in horticulture. Mr. Murray went one better in Ailsa Craig than Mr. Cranston did with his Excelsior, and now, it would appear, Messrs. Dickson and Robinson have improved on Ailsa Craig with their Premier. *George M. Taylor, Edinburgh.*

SOCIETIES.

ROYAL SCOTTISH ARBORICULTURAL.

At the first meeting of the new Council, held in Edinburgh on the 25th ult., Mr. James Maclaren, factor, Castle Mains, Douglas, was elected to fill the vacancy in the office of Vice-President, caused by the death of Sir James Campbell. Committees and their conveners were afterwards appointed. The Society's annual exhibition is to be held this year in Glasgow, and the annual excursion in the North of Scotland with headquarters at Inverness. Great satisfaction was expressed at the announcement of the gift of the Benmore estate to the Forestry Commission as a demonstration area in Scotland, and it was agreed to recommend that in recognition of this generous and patriotic action the honorary membership of the Society should be conferred on Mr. Harry Younger at the next meeting, which will be held in Glasgow at the time of the forestry exhibition.

ABERDEEN NATURAL HISTORY.

"Flowers and the Sun" was the title of a most instructive lecture delivered by Dr. Macgregor Skene, lecturer in Plant Physiology, Aberdeen University, to the members of the Aberdeen Natural History and Antiquarian Society in the University buildings on Friday evening, the 20th ult. There was a large attendance, and Dr. George A. Williamson, lecturer in Tropical Medicine, Aberdeen University, presided.

Dr. Skene stated that his subject that evening dealt with a problem of plant biology at present in the course of investigation. It was not one of the main problems of biological science, but such a minor problem about a common occurrence as naturally attracted interest. The problem might be illustrated by referring to the behaviour of the Crocus on a spring day. In the cool of the morning it was closed, and, as the sun rose and the air warmed, the flower opened, but with a passing shower it closed again. This was more remarkable than the behaviour of such a flower as the Daffodil, which opened once in the normal course of its development and did not close again. The movements of Crocuses, and of most other flowers, were determined by the increase and decrease of temperature. In some cases, however, especially in flowers that opened at night, the change in moisture might be effective, and some flowers reacted to light. One famous scientist selected a number of flowers according to the time of day they were known to open and close, and used them as a clock. They could not trust such a timekeeper in these days, however, for it was responsive to one element they could not trust nowadays—the weather.

Movement in a plant, naturally a torpid organism, was always remarkable, especially so when it was rapid. The mechanism of movement rested in this case on differences in the rate of growth on the two sides of the petal, and this could be linked up in the effect of temperature on the chemical changes which determined growth. The whole behaviour of the flower was not explained by this, however, for many flowers exhibited a rythmical and periodic movement, independent of changes of external conditions. The way in which this worked was scarcely known, nor was its mode of origin any better understood.

Referring to why the flowers closed, Dr. Skene observed that the flower might benefit by the protection afforded to its pollen by closing against rain, dew, and frost, but the extent and usefulness of this had yet to be investigated.

Mr. A. S. Watt, lecturer in Forest Botany and Forest Entomology, Aberdeen University, proposed a vote of thanks to Dr. Skene for his lecture, which, he said, reflected a great deal of patient reading and study. Dr. Skene that evening had guided them on one of the most delightful excursions in which it had been their privilege to take part—an appreciation warmly endorsed by the meeting.

ELSTREE AND DISTRICT HORTICULTURAL.

The tenth anniversary dinner of this society was held at the Plough Inn, Elstree, on Thursday, February 19th, Lieut.-Comdr. Hugh Trevor Dawson, R.N., presiding. There was a large gathering of the members and friends. For the second part of the evening an excellent musical programme had been arranged by the hon. sec., Mr. W. J. Pritchard, and there was a brief toast-list.

The Chairman, in proposing "the Prosperity of the Society," referred to the regrettable illness of the President, the Hon. Vicary Gibbs, who was not able to join them, and also to similar misfortune which kept their old friend, Mr. Edwin Beckett, V.M.H., from attending. The toast was supported by Mr. William Cutbush, of Barnet, who described the society as one of the finest in the country.

Col. Hamilton, in proposing the toast of "the Chairman," said that having occupied the place of honour last year, he envied the chairman his post, inasmuch as he was presiding at the dinner of the finest horticultural society with the hardest working hon. sec. he knew, and a society that had such an excellent president, who had done so much for horticulture generally, whilst, in addition, they were fortunate in having the help and sage advice of the king of gardeners, in the person of their absent friend, Mr. Beckett.

READING AND DISTRICT GARDENERS'.

Notwithstanding the inclement weather, a very large attendance of members from the surrounding districts assembled on Monday, February 23, at the Abbey Hall, under the chairmanship of the President, Mr. Frank E. Moring, to hear a lecture on "Liliums" by Mr. Arthur Osborn, of the Royal Botanic Gardens, Kew.

The lecturer, who dealt with his subject in a clear, comprehensive, and instructive manner, said that the family of Lilies, by which is meant the members of the genus Lilium, consisted of about seventy species and twice as many varieties. The species were distributed over almost the whole of the temperate regions of the world. Those in commerce come from Japan, China, North America, Europe, the Himalyas, Siberia, and Burma. With the possible exception of L. Martagon, no Lily is indigenous to the British Isles. Full cultural details of these bulbous plants were given under the following headings.— Sowing of seed, raising stock by scales and division; beds and borders; preparation of soil, planting the bulbs, protection in winter, and time of planting; culture in pots, potting soil, and size of pots. Then followed a series of lantern slides depicting many of the most popular species and varieties. The following were recommended as the most suitable for growing under glass or in the open ground:—L. Martagon album, L. chalcedonicum, L. croceum, L. tigrinum, L. candidum, L. longiflorum, L. speciosum, L. auratum, L. regale, and L. Thunbergianum.

An interesting discussion ensued, in which Messrs. Reeves, Fulker, Cox, Howlett, Young, Dove, Cook, Gover, Townsend, and Barnes took part.

In the competition for three dishes of vegetables, for prizes presented by the President, the first prize was awarded to Mr. A. W. Gower, The Gardens, Calcot Grange (Onions, Potatos and Sprouts); the second to Mr. H. Wade, The Gardens, Abbotsfield, Goring Heath (Broccoli, Potatos, and Sprouts), and the third to Mr. A. H. Fulker, The Gardens, Elmhurst, Reading (Onions, Potatos, and Sprouts). In the non-competitive section, a First-Class Certificate was awarded to Mr. A. W. Gower for three excellent plants of Blue Gem Cineraria. Mr. C. J. Howlett, The Yews, Earley, exhibited a very interesting plant of Echevera gibbiflora, and Mr. F. Alexandre, The Gardens, Kennett's Lodge, Theale, two dishes of Apples in splendid condition.

Obituary.

J. W. Cole.—We regret to record the death of Mr. J. W. Cole, head of the firm of Messrs. J. W. Cole and Son, Midland Nurseries, Peterborough. Mr. Cole was sixty-two years of age, and although he has not been in good health for several weeks his death came with painful suddenness on Friday, the 20th ult., following a seizure from which he never recovered. Although of quiet, retiring disposition, Mr. Cole was well known to the horticultural trade as a Chrysanthemum and Dahlia specialist. He was a frequent exhibitor at the leading shows, and in recent years had invariably put up a large group of Chrysanthemums at the National Chrysanthemum Society's exhibition in London. He took a great deal of interest in local affairs, and also in all matters relating to the Baptist Church, of which he was a member and a generous supporter. Mr. Maurice Cole, his son, who was a partner with his father, will continue to carry on the business.

Mrs. C. W. Earle.—We record with deep regret the death of Mrs. Maria Theresa Earle, better known as Mrs. C. W. Earle; she died on February 27 at her home at Cobham. Mrs. Earle was a keen gardener, and will be best remembered for her interesting works entitled *Pot-pourri from a Surrey Garden* and *More Pot-pourri from a Surrey Garden*. Although this talented lady was sixty years of age before she published *Pot-pourri from a Surrey Garden* it was an instant success, for it is one of the most delightful books on gardening ever written and has been translated into many languages.

Sir Everard A. Hambro.—We greatly regret to announce the death of Sir Everard Alexander Hambro, the distinguished banker; he died on February 26 at his residence at Hayes Place, Kent, aged 82. Sir Everard was very fond of gardening, and his exhibits of alpine plants at the spring meetings of the Royal Horticultural Society, prior to the war, were not surpassed by any of a similar nature and received high awards.

TRADE NOTE.

The Fertilisers and Feeding Stuffs Advisory Committee, which was appointed in December last under the Chairmanship of Lord Clinton, are at present concerned with formulating proposals with regard to the articles and classes of articles that should come within the scope of the proposed new legislation. Their intention is that, when this has been done, their draft should be circulated to a number of interested associations, whose comments will be invited. In those cases where the observations offered on behalf of any interest indicate that a serious difficulty exists, the Committee intend, at a later stage, to exercise their power of co-option and invite representatives of the interests concerned to confer with them.

ANSWERS TO CORRESPONDENTS.

Correction.—We regret that an error crept into the text of our paragraph on p. 140, issue of the 28th February, entitled "Honour for Belgian Horticulturists." The "Ordre d'Orange Nassau" was bestowed by the Queen of Holland, not the King of the Belgians.

Iris Leaf Blotch Disease: *F. I.* The Iris leaves are affected by the Iris leaf blotch disease, caused by the fungus Heterosporium gracile. It is useless to employ a spray fluid to check this disease as it is impossible to wet the leaves sufficiently owing to their waxy nature. The following method has been found efficacious in eradicating the disease. All the diseased foliage should be removed and burned, the ground then dressed with slaked lime at the rate of about two tons to the acre; it is not necessary to lift the plants in order to treat the soil. The lime should be forked in the soil directly after its application, and it will be found that not only will growth develop cleanly and healthily in the spring, but it will remain so throughout the season.

Names of Plants: *A. T. H.* The labels on numbers 1 and 2 had become detached, but the one that flowers each winter is Arbutus hybrida, and the other is Photinia serrulata; No. 3 is Erica lusitanica. *Ruts.* Pulmonaria officinalis. *Florist, Antrim.* 1, Pulmonaria officinalis; 2 and 3, forms of Galanthus nivalis; 4 Aspidium angulare; 5, Polypodium Phymatodes. *Inquirer.* Cyrtanthus lutescens. *J. H.* 1, Bletia hyacinthina; 2, Iris reticulata.

The Botanical Exchange Club: *Exchange.* Full particulars concerning the Botanical Exchange Club may be obtained on application to the Secretary, Mr. G. Claridge Druce, Yardley Lodge, 9, Crick Road, Oxford.

Twin-Flowered Snowdrops: *A. H.* The second flower on the scape of Galanthus Elwesii is, in this instance, due to a form of fasciation. The southern and eastern forms of Snowdrops, such as G. plicatus, nivalis var. caucasicus, Elwesii, and byzantinus generally produce a second flower scape from the one pair of leaves. In this case the second scape is fused with the main one, resulting in a second flower-scape branching out at two-thirds of its height. It will be interesting to watch this bulb in case the abnormality is repeated. Mr. E. A. Bowles informs us that the late Mr. Elwes sent him a bulb of a hybrid Snowdrop that when growing strongly produces secondary flowers. One out of many collected bulbs of G. Elwesii, var. Whittallii bore twin-flowers for several successive years in a Cornish garden. Mr. Boyd gave Mr. Bowles a form of G. nivalis that bears twin-flowers occasionally, but only when growing strongly. It appears that the family habit, so well marked in some species of Leucojum crops up occasionally in Galanthus.

Communications Received.—H. E. M.—A. B.—B. C.—F. S.—J. H. M.—G. L. W.—J. O'B.—P. F. B.—C. F. C.—G. J. W.—C. F.—A. J. McS.

SCHEDULES RECEIVED.

Taunton and District Chrysanthemum and Fruit Society.—Eleventh annual show to be held on Thursday, November 5, in the Territorial Hall, Taunton.—Secretary, Mr. W. H. Loosemore, Tregenna, Greenway Road, Taunton.

Royal Caledonian Horticultural Society.—Spring show to be held in Waverley Market, Edinburgh, on April 24 and 25; International exhibition to be held in the Industrial Hall, Edinburgh, on September 9, 10, and 11.—Secretary, Donald Mackenzie, 4a, St. Andrew Square, Edinburgh.

Bath and District Horticultural Society.—Annual show to be held in conjunction with the National Rose Society's provincial exhibition at the Sydney Gardens, Bath, on Wednesday and Thursday, July 8 and 9.—Secretary Mr. F. J. Cashnella, 7, Cambridge Place, Bath.

MARKETS.

COVENT GARDEN, Tuesday, March 3, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldii ...	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Azaleas, per doz.	15 0–36 0
Cacti, per tray, —12's, 15's ...	5 0– 7 0
Crotons, per doz.	30 0–45 0
Cyclamen—	
—32's	36 0–48 0
—48's	24 0–30 0

	s. d. s. d.
Cyrtomium ...	10 0–15 0
Erica melanthera, 48's per doz. ...	21 0–30 0
— —60's, per doz.	8 0–10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0– 4 0
Marguerites, white, 48's, per doz. ...	18 0–30 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia ...	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's ...	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 6

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun. ...	12 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays ...	1 6– 2 6
short „ ...	0 9– 1 3
—Sprengeri, per bun.	
long sprays ...	1 6– 2 0
medium „ ...	1 0– 1 6
short „ ...	0 4– 1 0
Azalea, white, per doz. bun. ...	9 0–10 0
Bouvardia, white, per doz. bun ...	12 0–15 0
Camellias, White, per box ...	3 6– 4 0
Carnations, per doz. blooms ...	3 0– 5 0
Croton leaves, var., doz. leaves	0 9– 2 6
Daffodils—	
—Emperor, per doz. bun. ...	12 0–15 0
—Golden Spur, per doz. bun. ...	4 0– 5 0
—Henry Irving, per doz. bun. ...	4 0– 5 0
—King Alfred, per doz. bun. ...	15 0–18 0
—obvallaris, per doz. bun. ...	3 0– 5 0
—Sir Watkin, per doz. bun. ...	10 0– 12 0
Fern, French, per doz. bun. ...	0 9– 1 3
Freesia, per doz. bun., special ...	9 0–12 0
—White, per doz. bun.	2 6– 3 0
—Special, long, per doz. bun. ...	9 0–12 0
Galax, American, green and bronze, per doz. bun. ...	— 3 0
Iris tingitana, per doz. spikes ...	5 0– 6 0
Lilac, Dutch, per spikes	4 0– 8 0
Lilium lancifolium album, per doz. blooms	— —
—rubrum, long, per doz. blooms ...	4 0– 5 0
—short „ „ ...	3 0– 4 0
Lilium longiflorum long, per doz. ...	9 0–10 0
short „ „ ...	— —
Lily of the Valley, per doz. bun. ...	24 0–36 0
Narcissus—	
—Scilly White, per doz. bun. ...	4 0– 6 0
Orchids, per doz.	
—Cattleyas ...	24 0–30 0
—Cypripediums ...	5 0– 7 0
Primroses, per doz. bun.	2 6– 4 0

	s. d s. d.
Prunus triloba (Dutch), per bun.	1 0– 1 6
Richardias (Arums) per doz. ...	9 0–10 0
Roses, new crop, per doz. blooms, Richmond ...	6 0– 9 0
Ruscus, French, per bun. ...	1 0– 2 0
Smilax, per doz. trails	2 0– 3 0
Snowdrops, doz. bun.	2 0– 3 0
Sweet Peas, per doz. bun. ...	15 0–18 0
Tulips, per bunch—	
—Couronne d'Or	2 0– 2 6
—La Reine ...	1 6– 2 0
—Mons Tresor ...	2 0– 2 6
—Prince of Austria	1 9– 2 0
—Rosina	1 6– 2 0
—Thomas Moore	1 6– 1 9
—Wm. Copland...	2 6– 2 9
Violets, per doz. bun	2 0– 4 0
French Flowers—	
Anemone, dble, pink, per doz....	3 6– 5 0
—De Caen, mixed, per doz.... ...	9 0–12 0
—single blue, per doz.	3 0– 4 0
Carnations, per bun	1 6– 2 0
Freesia, long, per pad	14 0–15 0
Marguerite, yellow, per pad	8 0–10 0
Marigolds, per pad	7 0–10 0
Mimosa, per pad	8 0–12 0
—per bun. ...	1 0– 1 3
Narcissus—	
—Grand Primo, per doz. bun. ...	5 0– 8 0
—ornatus, per doz. bun. ...	7 0–10 0
—Soliel d'Or, per doz. bun. ...	4 0– 5 0
Ranunculus, double scarlet, doz bun.	8 0–10 0
—Carmine, per doz. bun ...	8 0–12 0
Roses, Safrano per bun. of two doz. blooms	2 6– 3 6
Roses, per pad ...	8 0–10 0
—Ulrich Brunner, per doz. blooms	6 0–10 0
Star (Allium), per pad, 48's ...	9 0–10 0
Stock, double white, per pad 24 bunches ...	8 0–10 0
—double coloured	7 0– 8 0
Violets, Parma, per bun. ...	2 6– 3 0
—single, per pad	6 0– 8 0
Wallflowers, per pad	5 0– 7 0

Remarks.—In this department business has not been so brisk during the past week, but prices generally show little change from the previous week owing to a more limited supply from all quarters. White flowers, such as Azaleas and other small blooms required for floral designs, have been insufficient for the demand during the past few days. Arums (Richardias) have also returned to a high figure, owing to a short supply. Similar remarks apply to Lily of the Valley. Tulips maintain their good quality and price as do special Daffodils, long-stemmed blooms, from home growers, and there is little change to record amongst the cheaper grades from the Channel Islands. Narcissus ornatus, from the Spalding district, has been arriving in good condition, but supplies are slightly reduced. Roses are as quoted last week, and no other varieties have arrived at present.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Oregon Newtown	15 0–17 0
—Newton Wonder	6 0–10 0
—Bramley's Seedling—	8 0–14 0
—Californian Newtown ...	10 0–12 0
—Spitzenberg ...	13 0–16 0
—Stark	21 0–26 0
—Russett... ...	25 0–35 0
—Baldwin ...	26 0–30 0
—Greening ...	30 0–35 0
Bananas, singles	16 0–25 0
—doubles... ...	17 0–27 6
Grapes—	
—Gros Colmar ...	4 0– 6 0
—Belgian Colmar, per lb.	2 6– 3 0
Grape Fruit, Cuban	20 0–24 0
—Jamaica ...	20 0–24 0
—Florida	25 0–27 6

	s. d. s. d.
Lemons, Messina, per box	8 0–10 0
—Murcia	12 0–14 0
—Naples	15 0–25 0
Oranges, Jaffa ...	16 0–20 0
—Spanish—	
—300's	14 0–30 0
—360's	14 0–20 0
—504's	14 0–18 0
—Seville	20 0–25 0
—Malaga Sour ...	17 0–20 0
Pears, South African—	
—Williams's Bon Chretien ...	5 0– 7 0
—Clapp's Favourite	4 0– 5 0
Pines	2 0– 4 6
South African Peaches... ...	6 0–12 0
—Chalcots... ...	6 0– 8 0
—Nectarines ...	5 0– 8 0
—Plums	
—Santa Rosa ...	5 0– 6 0
—Wickson ...	6 0– 8 0
Tunis Dates, doz.	5 0– 6 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	2 6– 4 6
—Worthing ...	2 6– 4 0
—Madeira, per box	2 6– 6 0
Beets, per cwt....	4 6– 5 0
Cabbage, per tally	6 0– 8 0
Canary Island Tomatos ...	18 0–25 0
Cauliflowers, per doz.	4 0– 8 0
Forced Mint, per doz.	4 0–10 0
Celery, best, washed, per bundle ...	2 0– 3 0
—Second	0 9– 1 0
Chicory, per lb....	0 3–0 3½
Carrots, per bun.	— 0 10
—New	— —
Cucumbers, per doz.	10 0–18 0
Dutch Onions ...	11 6–13 0
Endive, per doz	1 6– 3 6
Batavia, per doz.	3 0– 3 6
English Asparagus—	
—Finest	10 0–10 6
—Best	4 0– 6 0
French Asparagus—	
—Paris Green ...	8 0– 9 0
—Lauris	6 0–10 0
Greens, per bag ...	1 0– 2 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundles	2 6– 3 6

	s. d. s. d.
Lettuce, per dozen	1 6– 2 0
—Outdoor ...	2 6– 3 0
Mushrooms, cups	2 6– 3 6
—broilers	1 3– 1 9
Onions, Valencia, per case ...	16 0–18 0
—English, per cwt.	12 0–13 0
Parsnips, per cwt.	4 0– 6 0
Peas, French, per cane	— 8 0
Potatos, Canary Island, per case	8 0–12 0
—King Edward ...	16 0–18 0
—Spring crop ...	15 0–18 0
Potatos, per ton—	
—Dunbar ...	220 0–240 0
—King Edward	190 0–210 0
—White	90 0–180 0
—New Guernsey lb.	0 9–0 10
Potatos, New—	
—Algerian, per lb.	0 2½–0 3
—Azores, per case	10 0–18 0
Radishes—	
—Guernsey round	1 6– 2 0
—Guernsey long...	1 0– 1 6
—French	3 0– 3 6
Rhubarb, Forced per doz.... ...	2 9– 3 3
Savoys, per tally	7 6–12 6
Seakale, per punnet	1 6– 2 0
Spinach, per bushel	5 0– 6 0
Sprouts, bag ...	4 0– 7 0
Sweet Potatos ...	3 0– 4 0
Turnips—	
—New, per bun ...	0 10– 1 0

Remarks.—A better demand has made conditions in the market much brighter generally, nearly all sections reporting improved business. Consignments of South African fruits are on a large scale, but even so prices have held well, and Peaches, Nectarines, Plums, Pears, and Grapes are selling satisfactorily. Trade in both imported and home-grown Apples is better, especially for fruits of the first quality. Hot-house Grapes continue to sell briskly, and are quoted higher. Forced Beans are rather less plentiful. Forced Asparagus is moving freely, although French Asparagus shows an almost daily increase in quantity. Forced Potatos are a moderately good trade. New Potatos from the Canary Islands, Algeria and Azores are not wanted, even at comparatively low figures. Tomatos from the Canary Islands are selling extremely well. Bananas from the same source are a steady trade. Forced Rhubarb has gone out well; the small consignments of natural Rhubarb have not yet had much effect. Mushrooms are slightly firmer in price, the quantities marketed being lighter. Cucumbers are arriving in more satisfactory quantities from both the Lea Valley and Worthing districts. Green vegetables are not so abundant, and inclined to be higher in price. Trade in old Potatos is fairly good, with fair supplies on offer.

GLASGOW.

While price movements during the past week reflected a little irregularity, there was no material change either way, and following a good general demand, the recent improvement was well maintained.

Supplies of cut flowers were on a smaller scale, and as this condition applied more particularly to first quality blooms advancing prices were conceded by buyers. No. 1 Pink Tulips made 1/9 for 6's, Mavisbank special Bartagon increased from 1/4 to 1/6 and 1/9, while ordinary ranged from 1/- to 1/4; best Copland and Prince of Austria, 1/4 to 1/6; medium Copland 10d. to 1/3, and Prince of Austria 8d. to 10d.; Murillo 1/3 to 1/4 for best; others 8d. to 10d.; La Reeve, 1/- to 1/3; Couronne d'Or, 1/6, ordinary, 10d. to 1/2; Farncombe Sanders, 1/- to 1/3 and Tea Rose, 10d. to 1/3. Guernsey Daffodils averaged from 3/- to 4/- per doz.; English Golden Spur, 10d. to 1/-; Sir Watkin, 1/- to 1/2; ornatus, 6d. to 9d.; and King Alfred, 1/- to 1/2 for 6's. Carnations were steady from 2/6 to 4/- per doz. Richardias (Arums), 6/- to 9/-; Lilium Harrisii, 10d. per bunch. Lily-of-the-Valley, 2/- to 2/6. Prunus, 2/6 to 3/6. Violets, 1/- to 1/6 doz. bunches; Parma Violets, 3/- to 3/6. Snowdrops, 1/6 to 2/6. Wallflowers, 1/6 to 3/-. Smilax and Asparagus, 1/- to 1/6. Mimosa was dearer, up to 10/- per cane being paid for special, and 4/- to 6/- for medium; while special White Lilac made from 6/- to 8/-, ordinary from 3/- to 4/, and purple 4/- to 5/-. Hyacinths in bowls were firm at 2/- each.

In the vegetable section English Leeks improved to 7/- per doz. bunches; Cauliflowers to 9/- per crate of two dozen, and Beans to 7/- per box. On the other hand Cucumbers were slow in sale and suffered a further reduction to 1/3 and 1/6 each. Salads were steady, Lettuce from 1/9 to 2/3; Siboes, 7/- to 8/-; Radish, 2/6; Watercress, 1/-; Mustard and Cress, 2/6 to 3/-. Case Onions were easier disposed, 4's being 13/6, 5's 16/-, and 6's 15/-, but Dutch were dearer at 11/6 to 12/6 per bag.

The consumption of fruit continues very steady with little or no variation in values. Apples, Oranges, Lemons, Grapes, and Pears were practically unchanged, but Grape Fruit was lower at 22/- to 24/- per case. The market was bare of Jaffa Oranges until the end of the week, when a cargo arrived in the Clyde.

NEW HORTICULTURAL INVENTIONS.

Latest Patent Applications.

3,033.—Warneford, J. R. K.—Traps for snails, etc. February 3.

2,788.—Lee, F.—Framework for netting for protection of small seeds. January 31.

2,378.—Read, H. M.—Gardening aprons. January 27.

2,108.—Berrigan, J. J.—Manufacturer of fertilizers and stock foods. January 23.

Specification Published this Month.

227,077.—Wolf, C.—Potato-digger.

205,825.—Blass, S.—Planting machines.

Abstract Published Last Month.

Mechanical Aids in Planting.—Patent No. 226,740.—Some useful mechanical aids in planting have been combined in a single appliance, the invention of Mr. H. Michael, of 4, Steinsgraben, Gottingen, Germany. The tool comprises a dibble, a measuring line, a measuring stick, and a pair of compasses, the last being formed by one of the rods carrying the measuring line. The rod having the dibble end has hooks around which the measuring line is wound, and the other rod to which the line is hooked is formed in two parts pivoted together. These two parts are graduated and may be used as a pair of compasses or, when opened out, as a measure of length. A guard protects the points when closed. When the instrument is folded up, a pair of hooks engage and a stirrup holds the parts together.

This list is specially compiled for *The Gardeners' Chronicle* by Messrs. Rayner and Co., Regd. Patent Agents, of 5, Chancery Lane, London, from whom all information relating to Patents, Trade Marks, and Designs, may be obtained gratuitously.

Messrs. Rayner and Co. will obtain printed copies of the published specifications only, and forward on post free for the price of 1s. 6d. each.

GARDENING APPOINTMENTS.

Mr. J. A. Hall, for several years Gardener to the late R. H. C. Harrison, Esq., J.P., at Shiplake Court Gardens, Henley-on-Thames, as Gardener at The Grange, Sutton Courtenay, near Abingdon, Berkshire.

Mr. A. Beckett, for the past six years Gardener to G. E. Sisterson, Esq., Sedbury Park, Richmond, Yorkshire, previously Gardener to the late Sir W. S. Wilson Todd, Bart., Halnaby Hall, Yorkshire, as Gardener to Colonel H. K. Stephenson, D.S.O., Hassop Hall, Derbyshire.

CATALOGUES RECEIVED.

Perry's Hardy Plant Farm, Enfield, Middlesex.—Water Lilies, Bog plants, Alpines and perennials; Lilies and Gladioli, etc.

Maxwell and Beale, Broadstone, Dorset.—Hardy Heathers, etc.

Maurice Prichard and Sons, Riverslea Nurseries, Christchurch, Hants.—Herbaceous and alpine plants, etc.

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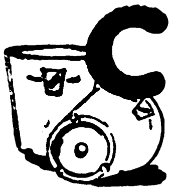

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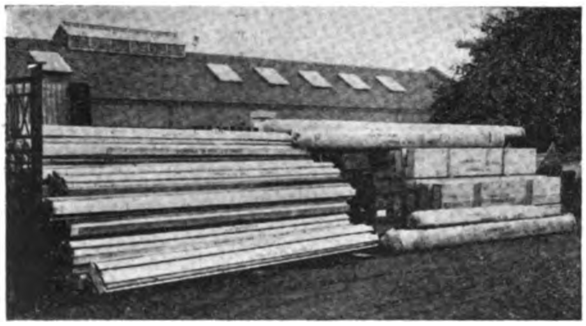

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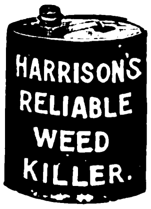
G. C. HARRISON,
Horticultural Chemist,
READING.



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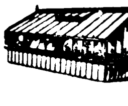

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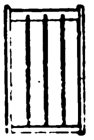

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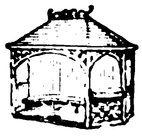

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THE
Gardeners' Chronicle

No. 1994—SATURDAY, MARCH 14, 1925.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 41·9°.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street Covent Garden, London, Wednesday, March 11, 10 a.m. Bar. 30·3, temp. 42°. Weather, Dull.

Kew in 1924. THE custom of publishing separately an annual Report on the year's work at Kew, which began soon after the Gardens became a national establishment in 1841, fell into abeyance with the inauguration of the Kew *Bulletin* in 1887. In-as-much, however, as experience has shown that a sufficiently full annual report cannot conveniently be published in the *Bulletin*, the custom of a separate annual report has—and we think wisely—been revived. Everyone interested in horticulture takes an almost proprietary interest and pride in the Royal Gardens, Kew, and although bare print cannot be a satisfactory substitute for the periodical pilgrimage to the mecca of British horticulture, yet when circumstances proscribe the visits, to read an account of what is going on in the Gardens is some consolation for not having witnessed it. Moreover, as few outside the Gardens realise, Kew is an institution of world-wide fame and far-reaching activities. Its correspondents are scattered all over the world, and from all parts come seeds and plants and questions and problems; and so the annual Report is likely to be read more universally than any other official publication whatsoever. In the present Report—for 1924—the sojourner in remote parts of the Empire may learn how storm and flood have played havoc with the river bank and breached the Gardens, and they may note—as indicative of the slow but sure devotion of the public services—that "as three authorities are concerned the filling in of the breach may be somewhat delayed." Of large changes in the Garden, one which will meet with general commendation is the removal of the rows of Atlantic Cedars from the central portion of the Cedar vista. The trees planted in 1871 were far too close, and had for years needed to be pruned closely in order to maintain any vista at all. Every gardener makes mistakes, as the close planting of these trees exemplifies; but the wise gardener is he who recognises the mistakes he does make and has the courage to rectify them. It is interesting to read that the cold, moist summer of 1924 proved as kindly to vegetation at Kew as it proved, no doubt, uncongenial to the visitors. Roses bloomed profusely, lawns and many trees and shrubs which had been injured by the drought of 1921 regained their vigour. Among additions made during the year, some of the chief are a bequest of Orchids by the late Hon. N. Charles Rothschild, including the Phalaenopsis collection long cultivated at Tring, whilst South Africa most generously gave its Wembley exhibit of Succulents and other native plants, including a specimen of the interesting Testudinaria elephantipes and numerous Mesembryanthemums belonging to the curious sphaeroid group. Botanical exploration has resulted in the acquisition by Kew of a vast number of seeds of plants likely to prove of garden or economic value, and it is testimony of the great and increasing regard in which the institution is held that no fewer than seven hundred and forty-nine separate consignments of living plants and seeds were received during the year—by far the largest number sent in any year since the establishment of the Gardens. Kew, as it should be, is as open-handed to give as it is to receive plants, and distributed some ten thousand packets of seeds to botanic gardens, nurserymen by way of exchange, or to educational institutions by way of gift. One of the most interesting announcements made with respect to future developments is that it is proposed to issue presently a series of monographs on horticultural genera, thus extending the work already begun at Edinburgh and the Arnold Arboretum. Such a series will be most welcome. New introductions are so numerous and hybridisation so busy that the gardener needs more help than he at present can readily obtain in determining the names of the plants he grows. Beside the activity of Kew as a garden is that of the institution as a herbarium, and although this is not the place to descant on the latter, it is but right that we should recognise—as all gardeners should—the essential importance of the collection of dried plants without which the correct naming of living ones would be, in many cases, all but impossible. The Report makes pleasant reading, for although of necessity, full of detail, such detail is testimony to the energy and ability which the staff bestow in their multifarious work. How much that work is appreciated is shown that in despite of the raininess of last year over a million-and-a-half visitors went to Kew—an increase of nearly four hundred thousand over the number of the previous year. The removal of the charge of one penny for admission, which took place as from April, 1924, was, no doubt, in large measure responsible for the increase, and if so, we shall take pleasure in remembering that we always protested against the penny-wise-pound-foolish system of taxing visitors to Kew.

Sir John Stirling Maxwell.—The announcement of Sir John Stirling Maxwell's resignation of the post he has held for some years as a member of the Forestry Commission, will be received with profound regret by all who have the re-afforestation of the country at heart. The retiring Commissioner's experience of affairs, his knowledge of the country as a whole and Scotland in particular, as well as his lifelong interest in the practical side of arboriculture, have been ungrudgingly placed at the service of the country since he joined the Commission.

Forestry Commission.—The King has approved of the appointment of Mr. Walter Robert Smith, J.P., as a member of the Forestry Commission in room of Sir John Stirling Maxwell, Bart., resigned. At the request of the Forestry Commission Sir John Stirling Maxwell has consented to continue to advise the Commission on Scottish matters.

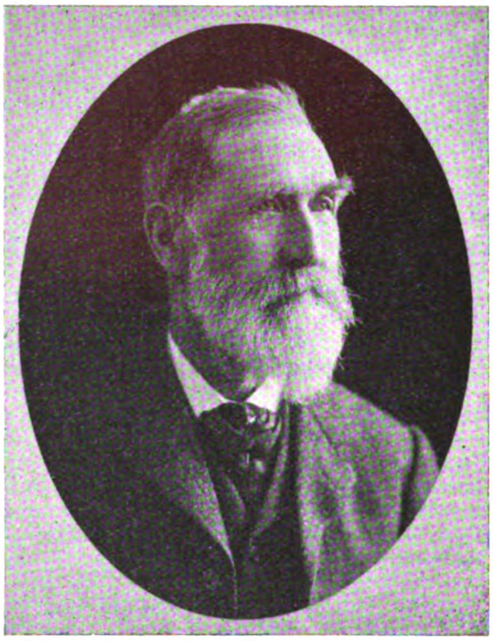
"Botanical Magazine."—Part II. of Vol. CL. contains illustrations and descriptions of eleven plants. Rhododendron glischrum, t. 9035, is closely akin to R. habrotrichum; the chief character of the species is the peculiar hair covering. The flowers are in umbels of ten to fifteen or more, and of a pale lilac or mauve-pink colour; the species is a native of north-west Yunnan. Primula melanops, t. 9036, has a very striking inflorescence of deep violet or Tyrian-purple flowers with a black eye: the long, linear-lanceolate foliage has meal on the underside of the blades, often slightly yellowish. Clematis napaulensis, t. 9037, is a Chinese species discovered by Mr. George Forrest in 1912, and is apparently an evergreen species. The flowers are solitary, arising from the leaf- or tendril-axils of the spurs, with creamy or greenish-white, silky sepals and purple stamens which are the attractive part of the flower. Montbretia laxiflora, t. 9038, was described by Mr. Worsley in *Gard. Chron.*, October 7, 1905, p. 269, under its synonym Tritonia Clusiana. It is distinguished by horn or peg-shaped processes which rise at a right angle from the three lower segments of the perigone. The flowers are red or reddish-purple. Cyrtorchis bistorta, t. 9039, is an epiphytic Orchid with racemes of white flowers that have long, greenish spurs. The plant was originally placed by Rolfe amongst Angraecum, but he transferred it subsequently to Listrostachys, and it is interesting to learn that the mistake was made owing to disturbance in the development of the inflorescences through the tips of the spurs being caught in the pockets formed by the bracts, with the result that they were bent in the shape of an S. Specimens at Kew, however, developed normally and provided material from which the plate was prepared. Agapetes speciosa, t. 9040, is a very showy shrub discovered some twenty-five years ago by Mr. J. T. Bennet-Poë in a large clump of imported Orchids; he subsequently exhibited it at one of the meetings of the Royal Horticultural Society, and it was described by Dr. Hemsley as a new species. It makes a fine plant for a warm greenhouse, producing handsome, crimson coloured, tubular blossoms. Aeginetia indica, t. 9041, belongs to the Orobanchaceae and looks very much like a terrestrial Orchid. It forms a parasite on the roots of grasses and has oblong, fleshy yellow or red scales, and one-flowered, pale yellow or almost orange coloured scapes with red streaks. The calyx forms a boat-shaped spathe; the corolla is tubular, restricted towards the mouth, and of a Petunia colour. Ochna serrulata, t. 9042, was described and figured in *Gard. Chron.*, September 22, 1906, under its synonym O. multiflora, and is a West African species with large, broad, ovate or elliptic leaves and many-flowered racemes. The flowers are solitary, yellowish, and succeeded by bluish-black fruits, subtended by the sepals which become reflexed and turn vermilion-red. Cladrastis sinensis, t. 9043, is a Chinese species forming a tree up to about 20 m. high and 3 m. in girth. The inflorescence is a dense panicle bearing numerous pale pink flowers and a white corolla with a yellow blotch on the standard. Crocus Kotschyanus, t. 9044, is better known under its synonym C. zonatus, a name adopted by Baker in *Gard. Chron.*, 1873, p. 1432, and subsequently by Maw, in the issue for August 20, 1881, p. 234. A colony of this Crocus was illustrated in *Gard. Chron.*, October 27, 1917. Apparently the well-known name of Crocus zonatus is subsequent to C. Kotschyanus, which was published by Carl Koch in 1854 from plants at the Botanic Garden, Berlin. Sarcococca ruscifolia, t. 9045, is very like a Ruscus in appearance but has affinities with the Box, and when in flower or fruit is very attractive, the berries being scarlet or crimson coloured.

A New Commercial Crop from France.—Growers in the South of France, especially in the vicinity of Avignon, in the department of Vaucluse, are turning their attention to the cultivation of Plantago Psyllium (in French, *graine de Puce*), a small annual plant indigenous in parts of southern Europe and the north of Africa. In order to cope with the growing demands of industry, for which the supply has latterly been insufficient, the cultivation of this plant has increased considerably of late years. It is the seeds which are the important part of the plant; they are much sought after on account of the gum they yield. The gum is used in pharmacy as a laxative, and also industrially in the dressing of muslins and for the manufacture of shagreen from leather and skins. Seeds are usually sown in the autumn, in rows 50 centimetres apart and the crop is harvested by means of a reaping machine. The yield is reckoned to be about 1,500 kilogrammes to the hectare, sometimes rising to 2,000 kilos.

National Potato Society.—The Committee of the National Potato Society is issuing an appeal in order to meet a deficiency of £200 in its funds. This deficiency has arisen owing to a heavy loss incurred in connection with the exhibition held at Leicester in November last, and the Committee is endeavouring to raise an amount sufficient not only to clear the deficit but also to provide the nucleus of a prize fund for future exhibitions. During the past six years the annual exhibitions have been promoted without the issue of any general appeal, but the Committee would now welcome donations or applications for membership of the society, which should be addressed to Mr. W. H. Morter, Honorary Secretary, Cannon Hill Park, Birmingham.

Condition of the Market Vegetable Crops.—According to the monthly agricultural report published by the Ministry of Agriculture, spring-hearting Broccoli has wintered well, and the plants are maturing earlier than usual in many districts. Sprouting Broccoli also is developing early and promises well. Autumn-planted Cabbages are forward and promising, and those planted for greens are a healthy, early, and over-average crop, cutting having commenced in many places. Kale is generally good and Leeks a good average crop. Late varieties of forced Rhubarb are very promising, and the quality is fairly good, while the crowns of natural Rhubarb are of average strength, promising a normal crop in most districts.

Mr. H. B. May, V.M.H.—The proposal to make a presentation of his portrait, in oils, to Mr. H. B. May on the occasion of his eightieth birthday in June next will give his numerous friends an opportunity of showing, in some small degree, their appreciation of his efforts on behalf of British horticulture during practically the whole of his busy life. We take this opportunity of publishing a portrait of Mr. May with a few particulars of his horticultural career. It will doubtless be a surprise to many who know Mr. May and his activities, that he is in his eightieth year, for he is present at almost all the meetings of the Royal Horticultural Society and at other important metropolitan flower shows, whilst he presides over the deliberations of Section A of the Floral Committee of the Royal Horticultural Society with the same keenness as he has ever displayed, and his knowledge and opinion of what constitutes a good garden plant is as reliable now as when he was in business as a nurseryman and enjoying a reputation as one of the best cultivators of indoor plants in the country. As the appeal, published over the signatures of Lord Lambourne, and Messrs. R. Cory, W. Cuthbertson, D. Ingamells, Geo. J. Ingram, and Geo. Monro, states, since the death of the Rev. W. Wilks and Sir Harry Veitch, Mr. May is the great outstanding figure left on active service of that band who worked so hard to place the fortunes of the Royal Horticultural Society on a sound basis. For many years Mr. May has been a member of the Council of the Royal Horticultural Society and his knowledge of the horticultural trade and his business acumen have been of untold value to the Society. For a long time Mr. May was Chairman of the R.H.S. Narcissus and Tulip Committee and he succeeded Mr. William Marshall as Chairman of the Royal Gardeners' Orphan Fund, a position he only relinquished owing to the insistence of his doctor that he should give up duties that caused him to be out late in the evenings. Probably Mr. May's name is best associated with Ferns, for in his establishment at Edmonton he grew immense numbers of indoor Ferns not only for market, but exhibited fine collections of them continuously at the R.H.S. meetings. He grew other plants equally well, both flowering and foliage, such as Crotons, Ixoras, Palms, Campanulas, and Cyclamens. Mr. May holds the highest honour in the horticultural world—the Victoria Medal of Honour in Horticulture, which he received in 1911. It is significant of the general esteem in which this veteran horticulturist is held in that the appeal for subscriptions to the testimonial should be signed by the President of the Royal Horticultural Society, by a prominent amateur horticulturist in Mr. Reginald Cory, by a member of the retail nursery trade in Mr. W. Cuthbertson, by one of the most prominent market traders in Mr. Geo. Monro, and by representatives of the two horticultural charities, Mr. David Ingamells, Chairman of the Royal Gardeners' Orphan Fund, and Mr. Geo. J. Ingram, Secretary of the Gardeners' Royal Benevolent Institution. Mr. May is the only surviving member of the small band of horticultural enthusiasts who founded the Hortus Lodge of Freemasons. It is proposed that the presentation portrait be given him at an informal dinner on his eightieth birthday. A sum of about three hundred guineas is aimed at, and subscriptions for any amount from 5s. up to £5 5s. will be welcomed. If a greater sum is subscribed than is necessary for the cost of the portrait the surplus will be divided between the Gardeners' Royal Benevolent Institution and the Royal Gardeners' Orphan Fund. Cheques should be sent to Mr. Geo. Monro, 4, Tavistock Street, Covent Garden, W.C. 2, who is acting as Treasurer.


MR. H. B. MAY, V.M.H.

Journal of the R.H.S. Gardens Club.—The issue of the *Journal of the R.H.S. Gardens Club* for 1924, just to hand, contains interesting letters from old students and others connected with the Royal Horticultural Society's Gardens. Mr. W. J. Dowson concludes his article on "Rust Fungi,' the first part of which was printed in the previous *Journal*. Mr. G. Fox Wilson writes on the public gardens of Paris and Versailles, in which we learn that since the War the Jardin d'Acclimatation has been left to its own resources, with the result that all the glasshouses are empty and the number of hardy plants reduced to a minimum. Mr. J. E. G. White gives some particulars of old Wembley Park which, he states, was laid out as a pleasure ground and rendezvous for Londoners some thirty years ago. It was opened to the public at Easter of 1893, but it was not a profitable enterprise; much of the original planting is still to be seen. A useful article on "Some Chinese species of Rose" is contributed by Mr. A. F. Butler. Reference is made in the *Journal* to presentations made to Mr. C. Gosden on his departure from Wisley to take up an appointment at Hayling Island. The staff presented him with an engraved silver cigarette case and the students gave him a barometer. Much interesting information is given of the doings of members who have left the gardens and from which it appears that Wisley men will soon be almost as numerous in out-lying parts of the globe as are old Kewites. Accounts of the annual outing and annual meeting show that the Club is in a flourishing condition.

International Horticultural Exhibition at Haarlem.—The various horticultural organisations in Holland are combining to make the International Horticultural Exhibition at Haarlem as great a success as possible. The exhibition site occupies an area of about forty acres and is situated at Heemstede, a suburb of Haarlem. The site is a beautiful one, well furnished with trees, and with picturesque water scenery. Moreover, nearly three million of bulbs of various kinds were planted in the grounds last autumn, and an interesting collection of flowering trees and shrubs has been brought together. The exhibition, which opened on the 13st inst., will continue until May 21st, but apart from the general display there will be six special exhibitions in the large exhibition hall; the first of these, opening on the 13th inst. and continuing until the 22nd, will consist of forced bulbs and plants; from March 27 to April 5, the Royal Netherlands Horticultural and Botanical Society will provide the special display, while from April 11 to April 19th new Rhododendrons, Narcissi, and other decorative plants will be the leading features; from April 24 to May 3 Belgian horticulturists will contribute displays of Azaleas, Orchids, Palms and other of their specialities; from May 6 to May 10 the Dutch florists will give an exhibition of floral art, and the concluding special exhibition will be held from May 15 to May 21. A plan of the exhibition is given on p. 181 and the references therein are as follow: 1, entrance; 2, office; 3, bicycles; 4, information office, picture post cards and exchange; 5, sundries; 6, scientific section; 7, restaurant; 8, front bulb garden—Crocuses, Hyacinths, and Tulips in succession: 9, band stand: 10, exhibition hall for special shows; 11, collective exhibit of the Dutch Bulb Exporters' Association; 12, Daffodil valley; 13, miniature bulb fields; 14, various exhibits; 15, Daffodil trial-garden; 16, rockeries; 17, tea house; 18, wild garden; 19, indigenous flowers; and 20, fruit-tree gardens. The majority of English visitors are expected at Easter when Hyacinths will probably be at their best.

"Gardener's Chronicle" Seventy-five Years Ago.—*A word or two on the qualifications of Gardeners.*—As some discussion has lately arisen in your columns respecting gardeners being entitled to the term professional, may I beg your insertion of the following suggestions, as a mode whereby a line may be drawn between gardeners properly so called and that large class of individuals embraced by the term "gardener." I have no wish to undervalue the services of a body of men, a large portion of whom have many qualities in common with gardeners of a high grade, but would make education, as in other professions, the standard whereby to judge of a man's abilities. At present young men as gardeners obtain situations more frequently through interest than merit, and stand their chance of succeeding afterwards, by trusting to expedients, which if gentlemen knew of them, would not be tolerated for a moment. I shall not allude to this more particularly now, but proceed to explain my plan, which would both protect gentlemen seeking gardeners and the really deserving gardeners themselves. Here it is. All young men who have been educated as gardeners, and have undergone the usual training to be examined by a board sitting sometimes in London, something in the way in which young men are examined in the Society's gardens, and (modified to suit the case) similar to that practised by the College of Surgeons or the Apothecaries' Company, the board to consist of an equal number of scientific and practical men. The examination to be carried through every branch of science connected with gardening, and through the detail of each practical operation. All persons passing this examination to the satisfaction of the board, and whose moral character was good, to be furnished with a diploma, certifying as the case might be. An ordeal like this would soon separate so-called gardeners into two classes—a small select one, and, I imagine, a rather large class who might either by industry mend their position, by presenting themselves again for examination, or occupy that position their abilities had made for them, as possibly useful men enough in their way, but certainly not entitled to be termed professional gardeners. *Obitur Dictum. Gard. Chron., March* 16, 1850.

Appointments for the Ensuing Week.—Tuesday, March 17.—Winchester Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting. Friday, March 20.—Manchester and North of England Orchid Society's meeting.

PLANTS NEW OR NOTEWORTHY.

PITTOSPORUM CORNIFOLIUM.

THE species of Pittosporum illustrated in Fig. 68 is quite distinct from the majority of Pittosporums in general appearance and forms a small shrub needing the protection of a glasshouse, except in the more favoured parts of this country. It is a native of New Zealand, and has been cultivated in this country for nearly a century; it was figured in the *Bot. Mag.* t. 3161, and it is interesting to note from the *Bot. Mag.* that the specimen figured was from a plant in the greenhouse at Kew, while the one illustrated in Fig. 69 was also grown in the Temperate House at Kew, where the plant has been flowering for some little time past.

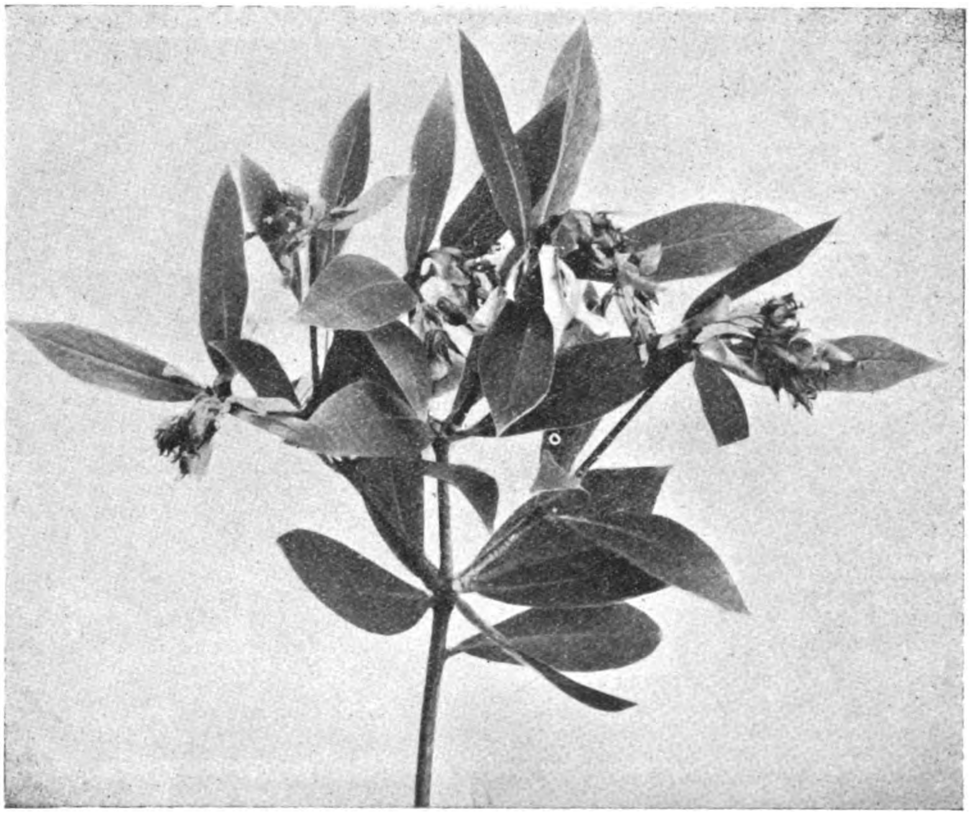


FIG. 68.—PITTOSPORUM CORNIFOLIUM.

The flowers are of a reddish-brown colour the petals, of which there are eight, forming a kind of tube in the lower part, through which appear the yellow anthers of the five stamens.

The inflorescences are axiliary and terminating the short sub-branches, with usually a whorl of three to four leaves subtending them; there may be two, three or four of these short umbels, on red stems. Immediately below each umbel there are three or four very pale green narrowly lanceolate, foliaceous bract-like leaves, sometimes so much as an inch long, with a distinct mid-rib and ciliate margins. The foliage is dark green, oblong, linear, and acute, much narrower and more pointed than in the specimen figured in *Bot. Mag.*, the under-surface of the foliage being a much lighter green.

The species was met with by Allan Cunningham in the early part of the nineteenth century in dark, humid woods by rivers in New Zealand, where it was said to flower in September and ripen its fruits about the close of the year. At Kew, however, the plant in the Temperate House was in full flower in early February, and continues in bloom.

As the illustration in *Bot. Mag.* differs in certain details from the specimen figured herewith, especially in the shape of the foliage and number of flowers in the inflorescence, we communicated with Mr. C. P. Raffill, who has charge of the Temperate House, asking him to verify the species of the plant at present in flower there. His reply is as follows: "there is no doubt whatever that our Kew plants—of which you had material for photographing—are correctly named Pittosporum cornifolium. The *Bot. Mag.* figure is not a very good one, and the shoot illustrated is only very sparsely flowered with blooms having sharply reflexed petals, but it does not differ botanically from the specimen you had, except that our Kew plant is a better form. The flowers are borne on short terminal umbels in February or March, and are deliciously fragrant, reminding one of Musk. The plant thrives in either pots or planted out in a border of a cool house, but is rather too tender for growing in the open air, except in very warm and sheltered gardens of the south and south-west of England. Pittosporum cornifolium forms a neat and compact evergreen bush some six feet to eight feet high and does not appear to be at all particular as to soil conditions. It is rather curious, however, that this plant is almost invariably found growing as an epiphyte on tall forest trees in its New Zealand habitat and for this reason it is known as the 'Perching Kohuhu.'"

The plant does not appear to be common in cultivation, and it is doubtful if many specimens exist in this country other than those grown in botanic gardens.

The Week's Work

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Raising Perennials from Seeds.—The raising of perennials from seeds, besides supplying the grower with vigorous plants of many garden favourites, is also an interesting phase of gardening. Many of our border perennials are not true species, and varieties and seedlings from them may be expected to vary considerably. If a packet of seeds of such perennials as Aquilegia, Centranthus, Delphinium, Echinops, Erigeron, Gaillardia, Geum, Lupin, Pyrethrum, and Trollius, which vary in shades of colour, is sown, the seedlings may be planted in a nursery bed and left there to flower the first year, after which the best may be selected for the borders. Besides getting fine, vigorous clumps, it is always within the range of possibility that something novel in colour may be obtained. Whether it is preferable to sow seeds of perennials under glass and plant the seedlings out of doors later, or to sow directly in the open is largely a matter of circumstances. On heavy soils indoor sowing is much more certain, but in many gardens space under glass cannot be afforded at this season, and on light, warm soils such excellent results may be obtained from open air sowing that indoor sowing hardly seems worth while. It may be stated, however, that the seeds can scarcely be sown too early, and it is wise to sow so soon as the surface soil is in a workable condition. From sowings of Lupins and Delphiniums made at about mid-March last year in these gardens, fully eighty per cent. of the Lupins, and about forty per cent. of the Delphiniums, flowered before the end of the season. The seeds were sown thinly in rows, and received no further attention beyond keeping the ground clean.

Ivy.—Where buildings are clothed with Ivy the plants should be cut back as closely to the wall as possible every spring. If done at the present time the bareness after clipping will be of short duration, as new growths will quickly furnish the stems with young, healthy foliage.

Planting.—The planting of deciduous tree and shrubs should now cease and all late planted subjects should be heavily mulched with partially decayed manure. Evergreens may be planted when the weather conditions are favourable, but it is not wise to carry out the operation when drying winds prevail.

Mignonette.—Although this plant is perfectly hardy and may be sown directly on to the site where it is to flower, to obtain early and good flower spikes it is best to sow under grass in small pots and plant out the seedlings when they are ready for removal.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Shading—If the blinds have not already been placed in position on the houses this work should be given immediate attention. A period of clear, sunny weather may be experienced at any time now, and after the dull, sunless winter it will be necessary to accustom the plants gradually to brighter conditions. The direct rays of the sun will now be getting too powerful for many Orchids, especially those in houses so situated that they shine directly on the plants. In the coolest division and especially span-roofed houses running north and south, it will be necessary to lower the blinds for a few hours while the sun is strong, as under its influence the temperature rises quickly above what is necessary to grow the plants to perfection. On bright, clear days, when the external air is perhaps some degrees below 40° it would be inadvisable to admit fresh air to the houses with sufficient freedom to keep down the temperature and at such times the blinds should be utilised. If the external atmosphere is above 50° more air may be admitted and with less shading. The blinds on the Cattleya and intermediate houses will only be needed for a short time during the middle of the day over the roof that faces fully south. Mexican Orchids should be only thinly shaded and will need little protection until the sun gets really strong, as these plants delight in plenty of sun-heat and light at all times.

Masdevallia.—The present is a suitable time for attending to Masdevallias, some of which will need only top-dressing, while others should be re-potted. Plants that have filled their receptacles with roots may be shifted into others a size larger, but in doing this do not disturb the roots more than is necessary. Specimens that have grown to the sides of their pots and have become bare in the centres may be broken up and, after cutting away the decayed parts, be placed in smaller pots, or made up afresh into specimens of a desired size. All strong-growing species, such as M. Harryana, M. ignea, M. Veitchii and others of this type may be grown in ordinary flower pots. The smaller growing kinds, of which the pure white M. tovarensis may be instanced, are best cultivated in pans. When re-potting this species cut away the flower spikes close to their base. Those of the M. Chimaera section, such as M. Wallisii, M. Backhouseana and M. Houtteana, are best grown in Teak-wood baskets, as their flowers are produced in a downward direction, and crocks should not be used for drainage, but coarse portions of Osmunda fibre laid over the bottom of the basket. Sphagnum-Moss and Osmunda-fibre in equal proportions, chopped rather finely and mixed well together, form a suitable rooting-medium for Masdevallias. The plants will grow well in the warmest and shadiest part of the Odontoglossum house.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Re-starting Dormant Plants—Plants which have been grown in pots for conservatory decoration, and which have been resting throughout the winter, should now be cut back and placed in a moist house having a temperature of about 60° where they may be regularly syringed. When a few inches of new growth has been made the plants should be repotted in a compost comprising lumpy, fibrous loam and peat mixed with charcoal and sand. A large part of the old soil should be shaken from their roots, transferring the plants to clean pots of the same size they previously occupied. Propagate a sufficient number of young plants to provide the stock for next year, choosing cuttings from the young shoots and make them about three inches long, with a slight heel of the old wood attached. Insert them in small pots containing peat and sand, and plunge the pots in a propagating frame in a warm house.

Cyclamens.—Young plants of Cyclamens raised from seeds sown last autumn should be ready for transference to three-inch pots. The soil in which they are to be potted should consist of fibrous, sandy loam and good Oak leaf-mould in equal parts, the whole being passed through a half-inch sieve, retaining as much of the fibre as possible. Add some finely-broken old mortar rubble and coarse silver sand. When potting keep the tops of the small corms well above the surface soil in the pots. Grow the young plants on near the roof-glass in a house having a temperature of about 55°. Use soft or rain water only and shade the plants from sunshine.

Browallia speciosa major.—For summer and early autumn flowering, sow seeds of this plant now. Treated as an annual it is valuable either for summer or winter. For the latter purpose, however, a midsummer sowing will be soon enough.

Datura Wrightii.—Grown as an annual this sweetly-scented flowering plant makes a pleasing addition to the summer occupants of the conservatory. The seeds will germinate quickly if placed over a gentle hot-bed. The plants should be grown on without a check, and flowered in a six-inch or seven-inch pot. A rich compost should be provided for the final potting.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Protecting Fruit Blossom.—The material for the protection of fruit buds of trees trained on walls against cold winds and frosts, should be placed in readiness for use. Apricots are the first fruit trees to open their flowers and should be the first to receive attention. There are various ways of protecting the blossom of fruit trees; some make use of sprays of Norway Spruce, Yew, and other evergreens, and this method answers very well where the trees are trained on old stone walls and the branches nailed, but it is very unsafe on windy nights, for the evergreens blown to and fro often cause a great deal of damage to the trees and buds. Canvas, if made of light and strong material is suitable, also tiffany, if of a fairly good quality. These should be made in definite lengths and widths, according to the height of the wall, and rings or strings should be attached to make them secure. Peaches and Nectarines on walls need the same protection as advised for Apricots.

Top-grafting.—The re-grafting of old Apple and Pear trees that are considered worthless should be done from now onwards to the middle of April, according to the conditions of the sap activity. The old stocks that were headed back in the winter should be shortened again, say, about an inch, to make a fresh cut for receiving the scion, smoothing the cut surface with a knife to make it clean and even. Judgment must be used as to whether the sap has risen sufficiently before the operation takes place; also the weather must be favourable. The scions should be very carefully selected, clean and free from fungous diseases. The shoots for use as scions should have been selected from clean, healthy trees; the outside laterals of the branches are the best, and the grafts should be about six inches in length; if taken from the leading shoots they are inclined to be sappy. There are different ways of top-grafting, but the most suitable for old stocks is the cleft or crown method. When grafting-wax is not obtainable, the best substitute is clay made workable, like putty, with a little chaff or chopped moss, well mixed with it; the latter material is a little more binding than chaff. In placing the clay on the scion see that the seat of union is made air-tight by a fairly thick covering. Make the surface of the clay smooth by dipping the hand into water and drawing it over the ball of clay. In hot, dry weather the clay will need daily attention by drawing a wet hand over the surface to prevent it from cracking, and this should be done until the graft and stock are united. Where Sphagnum Moss is obtainable, a little of this material may be tied over each ball of clay and kept moist by spraying.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Early Vinery.—Early vines, with the advent of more sun, are making rapid growth, and the laterals require stopping. Endeavour to furnish the house with strong healthy foliage, but not too densely. Generally the shoots may be stopped at the second leaf beyond the bunch, but in varieties such as Appley Towers, which often develops seven or eight leaves before showing the bunch, one leaf beyond the inflorescence is sufficient. So soon as the shoots are stopped new growths will immediately develop from the axils of the leaves, and these also will require stopping at the first leaf. Should there be any bare spaces between the spurs, these sub-laterals may be used to cover the trellis. The tying of the shoots will soon need constant attention; where the wires are close to the roof-glass great care is necessary in drawing the shoots down without tearing them out at the base. Wherever possible I like to allow the weight of the bunch to bring the shoot down, thus making one tying suffice, especially in the case of such sturdy growers as Alicante. Examine the borders for moisture and if water is required soak the soil with tepid water before the vines flower. Raise the temperature to 55° at night and 65° by day, admitting a little air early on all fine mornings. Watch for bad patches in the glass and paint these over, otherwise the sun will soon scorch the foliage. Ventilating the vinery will now require constant attention and the grower should take care to prevent scorching of the foliage. Close the houses at two p.m. and syringe the walls and borders. Damp the paths and border with fairly strong liquid manure.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Lettuces.—Make small sowings of Cos and Cabbage Lettuces at intervals of three weeks to keep up a continuous supply of fresh, young heads for use as salads. Thin the seedlings, when they are large enough, to the required distance apart, and transplant some of the thinnings. These transplanted Lettuces will heart a few days later than those left in the seed drills. It is a good plan not to plant all the seedlings in the same aspect, as if two or three different aspects are chosen for this purpose there will be more likelihood of maintaining a continuous supply.

Turnips.—Make sowings of Turnips in the open at intervals, as required, to keep up an unbroken supply of young roots. In this case, also, it is advisable to have a few rows in different positions, such as a line or two between rows of Peas, where they will receive slight shade. Keep the seedlings well dusted with soot and never allow these plants to become dry or the roots will be pithy and useless. Snowball is a variety suitable for all general purposes.

Potatos.—Plant tubers of an early variety of Potato that have been sprouted as recommended, on as warm a border as possible to provide a succession to those growing in frames or pots under glass. Choose a position where it will be easy to afford the plants protection from late spring frosts.

Seakale.—Plant Seakale thongs with a large dibber on ground that has been well manured for a previous crop. Make the rows two feet apart and set the thongs one-and-a-half feet asunder in the rows. When the plants have made sufficient growth in the spring thin the shoots to one good crown.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penarth, Westmoreland.

Half-Hardy Annuals.—The main sowing of half-hardy annuals should be made during the present month under glass. To obtain good, sturdy specimens grow them in cool conditions and prick off the seedlings so soon as they are large enough to handle. The compost for potting may consist of two-thirds good loam and one-third well-rotted leaf-mould that has been passed through a half-inch sieve, with sufficient sharp river sand added to render the soil porous. The boxes should be filled to within half-an-inch of the top, pressing in the compost evenly and firmly. A slight covering of fine soil should be added by sifting a little of the same mixture through a fine sieve. The soil in the seed box may then be thoroughly watered and allowed to drain before sowing. The depth to which the seeds are covered should be regulated by the size of the latter; some of the smaller seeds require little or no covering. The following half-hardy annuals may now be sown in slight heat: Alonsoas, Asters, Coreopsis, Cosmeas, Cupheas, Dianthus, Dimorphothecas, Eccremocarpus scaber, Eschscholzias, Perillas, Phlox Drummondii, Salpiglossis, Scabious, Tagetes, Verbenas, and Zinnias.

Plants in Frames.—Frames in which Pentstemons and Violas have been wintered may now be cleared of the plants, which should be lined out at a few inches apart in a sheltered piece of ground in the open. When lifted later they will have more roots than if planted direct in their flowering quarters from the frame. Fresh loam, leaf-mould and sand may be placed in the empty frames, when they will be ready for the reception of Antirrhinums, Asters, etc.

Herbaceous Perennials.—The lifting and replanting of hardy, herbaceous perennials should be completed at the earliest opportunity, as root action has in most cases commenced.

Ivy.—Ivy on walls may be trimmed, cutting it well back with the shears to present a tidy appearance.

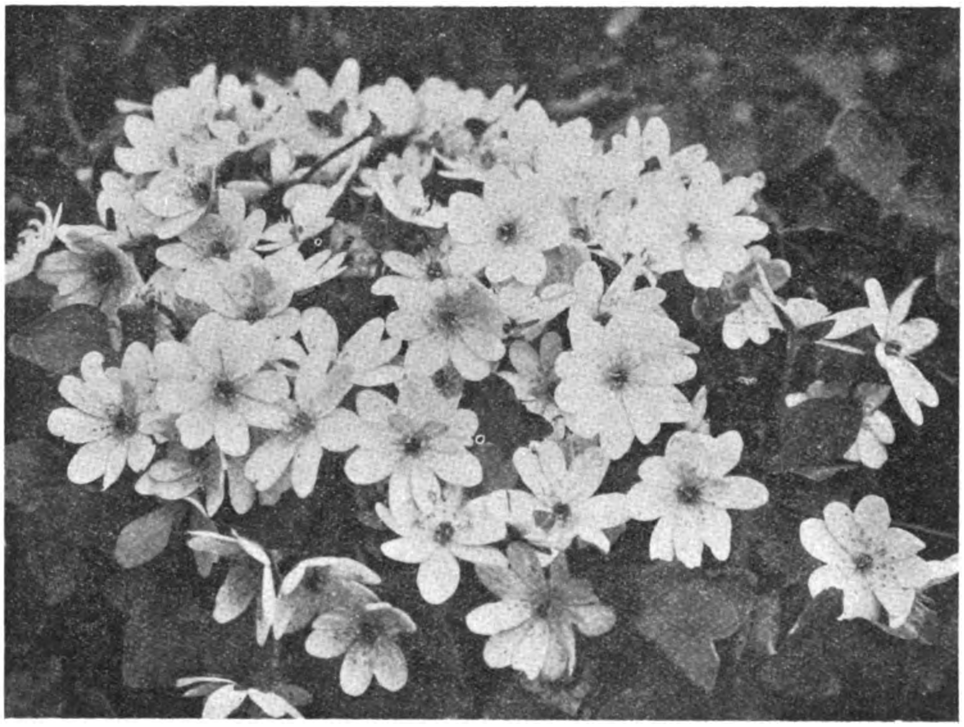


FIG. 69.—ANEMONE HEPATICA (HEPATICA TRILOBA); SINGLE BLUE.

THE HEPATICA.

In view of the fine and varied collection of plants in cultivation at Monreith, and the skill displayed in growing them, it is of distinct interest to hear of well-known garden inmates refusing to become established there. In a recent issue of *The Gardeners' Chronicle* (Feb. 21, p. 129), Sir Herbert Maxwell states that the Hepatica is one of these and would like to know the reason why. He has struggled with it, trying different modes of treatment, for forty years without success. There would appear to be scope here for investigation by the ecologist and physiologist. Is it a question of the degree of soil acidity; or to use the symbol so much to the fore at the present time, is the pH value of the soil at Monreith not to its liking?

Though I cannot answer his query, it may be of interest to record the fact that this "Anemone" finds no difficulty in flourishing here in a strong loam above a clayey subsoil (glacial drift) overlying the triassic red sandstone. The Hepatica (the usual blue form), Fig. 69, has been growing in this garden as long as I can recollect. Apparently it prefers a border other than south and probably dislikes the soil around it ever being really dry at any time of the year. The secret *may* lie here rather than in any great sensitiveness to the degree of soil acidity.

The Hepatica sets seed and a few years ago plants were raised in this way. One of these turned out to be the single pink form—an unexpected appearance, as this variety did not previously exist in the garden, though there was a plant or two of the double pink, which, however, one hardly credits with producing functional pollen. The seedlings flower the third spring. During the first year two cotyledons and one or two foliage leaves are produced. Only foliage leaves develop the second year, and then the third spring sees one or two flowers put forth as well as foliage.

The Hepatica is a delightful, early spring flowerer and none of the varieties to my mind surpass the single blue of a good deep shade. Through the foliage being evergreen the blooms do not show to full advantage on account of being mixed with and partly smothered by the persistent weather-worn leaves of the previous spring. One wonders whether any harm would ensue if these were snipped off during the winter prior to the flowering!

Sir Herbert Maxwell refers to this plant as an Anemone. If we pay heed to the latest expressed opinion of Kew, then this is hardly now correct. Mr. J. Hutchinson in his recent revision of the genera of the Ranunculaceae (*Kew Bulletin*, 1923, No. 2, p. 72) separates Hepatica from Anemone as a distinct genus—a return to the views of the older systematists before the publication of the *Genera Plantarum* of Bentham and Hooker. Hutchinson's separation appears sound, for not only does Hepatica differ from Anemone in its calyx-like involucre and evergreen leaves, but also in the way the flowers are borne, as the writer has ascertained for himself. In Anemone the flower or inflorescence is terminal; but in Hepatica the flowers are axillary, each proceeding from the axil of a scale leaf. According, therefore, to the latest authority, the subject of this article becomes once more Hepatica triloba and is no longer to be styled Anemone Hepatica. The genus, Hepatica, as now newly constituted, contains besides triloba, three other closely allied species. *J. Parkin, Blaithwaite, Wigton, Cumberland.*

RAISING ALPINES FROM SEEDS.

The acclimatisation of alpine plants by raising them from seeds is, if not the quickest, at least the safest of all the methods of propagation and one now practised in many gardens where Nature is accepted as the teacher. The plants of the mountains are almost all perennials; they disseminate their seeds in the autumn just before the time of rain and snow. Different causes assist the seeds to enter the soil during the winter, and at the first sign of spring germination takes place in the best conditions possible after a slow preparation. These conditions, unfortunately, are rarely provided in gardens.

Certain methods of raising alpine plants from seeds are adopted at Floraire and these have proved so successful that there are very few failures. Although in the case of certain kinds (many Ranunculaceae—not all—Umbelliferae, Rutaceae, some Primulaceae, Irideae, Liliaceae, etc.) germination is more or less slow, the generality of seeds germinate easily and freely. Success depends upon the atmospheric conditions of the country and raisers must give due consideration to climate—whether it be continental or insular, whether in north, boreal, or mountain districts, or warm and destitute of snow, frost and cold. Generally speaking, seeds of most mountain plants (and I mean those of every mountainous country in the world) may be treated similarly with some extra care in certain instances. Small seeds, like those of Saxifraga and Crassulaceae, for instance, must be carefully placed on the soil and not buried in it; this necessitates great care in watering, otherwise the water may carry the seeds away. Slow germinating kinds should be sown deeper and kept apart from the rest, the pots or pans being kept free from weeds until the seedlings appear.

Several methods are adopted to hasten germination. The so-called stratification method consists in placing the seeds in layers in beds of sand and allowing them to remain for several months; subsequently, if placed under suitable conditions they germinate rapidly. The fact that seeds from berries are slow to germinate recalls the fact that the fruits are generally eaten by birds or animals and that the intestine acids soften the seeds and so ensure a rapid germination when they fall to the ground. Reasoning from this there has arisen the method of treating seeds with an acidic solution in order to accelerate germination. Mr. Waugh, of the Vermont Experimental Station, U.S.A., contributed to *The Gardeners' Chronicle* of December 11, 1897, p. 420, an interesting note concerning some experiments made in the artificial use of diastase (malt) in the germination of seeds. He suggested a solution of five per cent. or ten per cent. of fresh malt. The seeds were soaked for twenty-four or forty-eight hours in the strained solution, the moisture drained off and the seeds planted. The results were good. Mr. Stewart, of the Royal Botanic Garden at Edinburgh (*The Garden*, February 16, 1924, p. 92) recommends the use of permanganate of potash in the proportion of five per cent. to ten per cent. In the French cultures of Maté, in Missiones (Argentine) they treat the seeds of Ilex paraguensis (Maté) in a ten per cent. solution of muriatic acid, as do the German Rose growers for the seeds of Rose canina. Some of these methods have been tested at Floraire and with good results, but they are rather disagreeable to carry out and we prefer to sow the slow germinating seeds in special pots which are placed separately in a deep frame. The first seeds to germinate are those of the Cruciferae, the Cistineae, Papilionaceae, Compositae, Viola, Crassulaceae, Caryophillaceae, Malvaceae, Campanulaceae, Labiatae, Valerianeae; and, in the Ranunculaceae family, the Aquilegia and Delphinium; the Papaveraceae, Hypericum, Saxifraga, Boraginae, Lobeliaceae, Rosaceae (except the berries, Rosa and Rubus); Primulas of the farinosa group, etc. Primula seeds are capricious; some, those of the P. farinosa and P. japonica groups, germinate rapidly, but the others, and especially those of the Auricula group, germinate slowly. They should be sown in moist, spongy soil like that used for the Pinguicula, Orchids and the Pyrolas. Some seeds (alpine Poppies, for instance, and Draba pyrenaica) should be sown in poor, sandy soil.

The composition of the soil for the reception of seeds is not so important as it is for the permanent position of the plants. It is necessary to have a light, porous soil, in which the small germ and the tender roots can develop without difficulty. At Floraire we use one part of peat or turf, one of light loam and one of sand. The sand must be destitute of lime in the case of calciphobous (lime-hating) plants. Peat is now used in place of leaf-mould as the latter attracted earthworms. Ample drainage is essential and in the case of a dry and continental climate a little layer of Sphagnum-moss over the drainage helps to regulate the moisture. This addition ensures better results and we have "marked with a white stone" the day we conceived the idea of using Sphagnum in the bottom of the seed pots. The use of Sphagnum when sowing seeds of alpine plants is a matter of the first importance, especially in continental climates. I go farther and would advise people who live in the south or in hot and dry countries to introduce chopped or sifted Sphagnum-moss into the composition of the soil. Sphagnum-moss is the best possible regulator of humidity; it acts like a sponge, attracting, retaining and then giving out the water as the soil requires it.

The best time to sow seeds of alpines depends upon the country in which they are sown. If snow is of regular occurrence then sow the seeds in late autumn and expose the pots, pan or boxes, so that they become covered with snow. Numerous experiments have been made at Floraire on the important accelerating effect of snow upon germination. I cannot repeat all I have published on this subject[*], but since I first gave the advice I have had numerous proof that the snow-method is the best for raising all the delicate seeds and of ensuring quick germination. A friend of mine has raised at Davos (Grisons) the most capricious and difficult of seeds with such success that I could not believe it until I saw it. The best method is to put snow over the sowings, then, after a fortnight or more, expose the pots or boxes to moderate heat: after a few days the seeds germinate like weeds. Old seeds of Phlox decussata which would not germinate in the ordinary way, came up like grass under this method. Snow has a wonderful effect upon germination.

Some seeds are best sown just after they are harvested; such is the case with Anemone, Ranunculus, Thalictrum, Paeonies, Eryngium, Primula and Gentiana. On one occasion I sowed seeds (just ripe) of Adonis vernalis, Anemone alpina and A. sulphurea, some Paeonies and Eryngium alpinum. The seedlings appeared from ten to twenty days after the sowing and showed their third leaves in October to November. Seeds from the same harvest were sown in the spring, eight months after they ripened: these remained from two to three years before germinating. Some thirty years ago, at Cheshunt, in Mr. Paul's nursery, I saw boxes of Anemone alpina and A. sulphurea in which seedlings were appearing three years after sowing; I had sent the seeds and was certain they were fresh; but, instead of being sown in autumn, they were not sown until the spring!

Certain seeds germinate best in a cold frame or perhaps a slightly heated one if very damp, to prevent loss by rotting, but it is a mistake to put them in a heated house. On one occasion I received two letters in the same week containing reference to the results obtained with seeds of alpines sent from Floraire. One writer could not write too gratefully of the success achieved: the other was desperate because he had no success. The two lots of seeds were of similar kinds. Both were sown in England, one in the south, the other in the midlands; the first writer, the one who succeeded, had sown his seeds in pans and pots put under a cold frame; the other, who failed, placed his seeds in a hot-house!

If seeds of alpine plants are sown in spring, water must be supplied regularly and on no account should the soil be allowed to become dry. The Sphagnum method is always desirable, but specially so for spring sowings. *H. Correvon, Floraire, Geneva.*

INDOOR PLANTS.

RICHARDIA AFRICANA.

Apart from market gardening it is seldom that one sees four houses filled with the above-named plant. At the end of the past year I walked through a long range of Peach houses and vineries in the gardens at Stoke Park, Slough, and found the whole floor of each of four divisions covered with the plants in eleven-inch pots. The tubers are planted out during the summer, and potted up early in autumn. They had been flowering for some time and looked as if they would continue to bloom all the winter. Mr. Jennings, the gardener, believes in growing them in cool conditions, and in giving top ventilation, more or less, every day. Each plant was of large size, full of vigour, well furnished with healthy foliage and producing spathes of corresponding size. Although they were being cut more or less every day, other spathes in various stages of growth could be seen at the rate of four to six or more in each pot. The plants are watered and fed judiciously, the aim being to secure a long succession of spathes as they are wanted. The method of culture was conducive to this end. There was no complaint about disease amongst them, such as occurs where they are forced for market, and the plants themselves did not show any. *J. F.*

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[*] *Plantes de Montagnes et des Rochers.* Pp. 21-23.

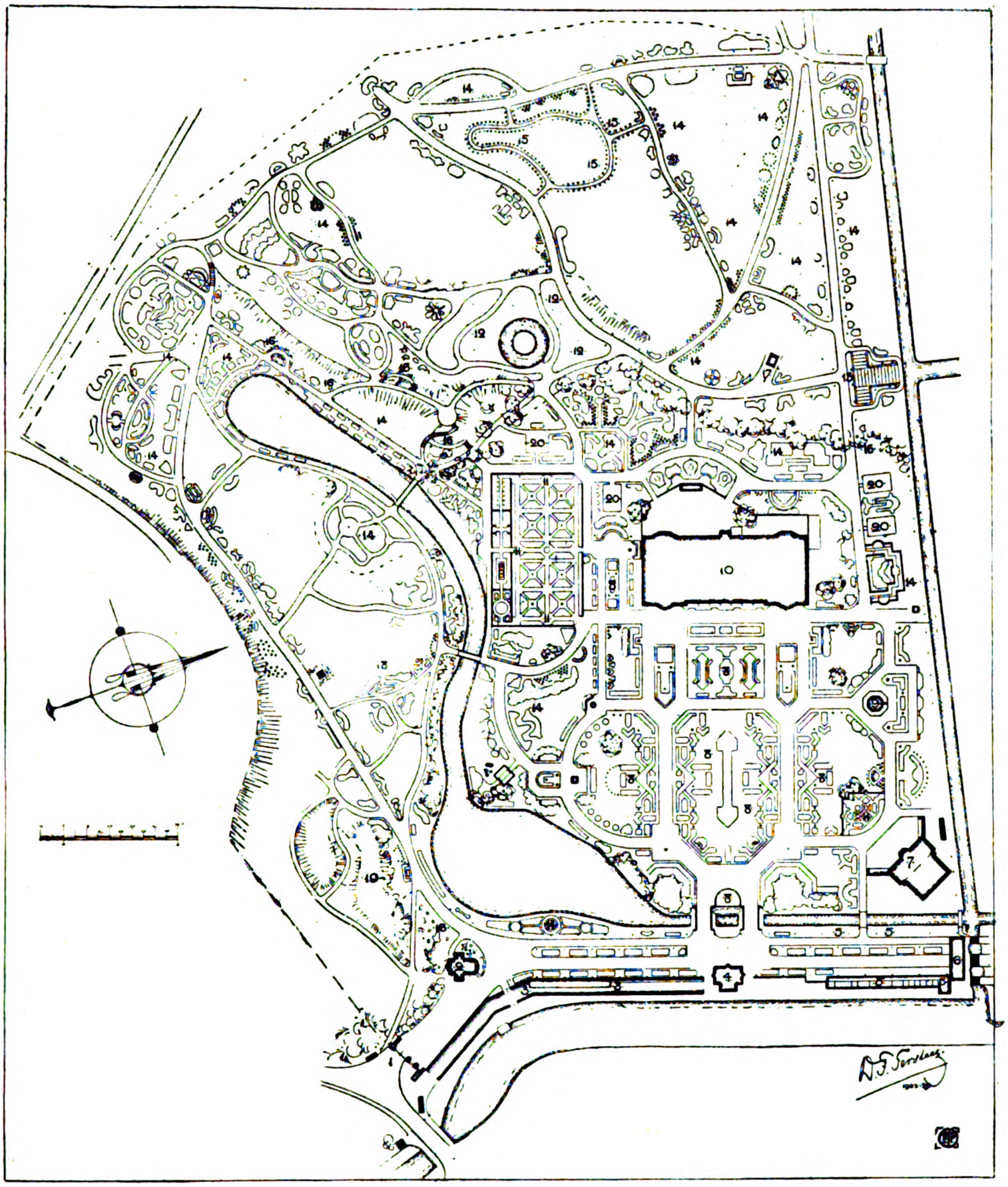

FIG. 70.—PLAN OF THE INTERNATIONAL EXHIBITION AT HAARLEM.

(see p. 176).

LACHENALIAS.

W. D.'s short, eulogistic article on these Cape bulbous plants in a recent issue of *The Gardeners' Chronicle* (February 28, p. 144) prompts me to pen a few lines respecting their merits. Lachenalias in the past have never appealed to me strongly. By a chance coincidence I happened to grow a pot of them for the first time this winter and have now become aware of their value for late winter or early spring indoor decoration. Last July, espying some strange-looking bulbs in a corner of a friend's greenhouse I casually asked what they were. He replied, nonchalantly, "Cape Cowslips; you can have them if you like." I took them, not knowing them by this name. On looking up the plant I became a little crestfallen to find they were the bulbs of my hitherto little-estimated acquaintance, Lachenalia. However, I crammed them into a good-sized pot in August and kept them near the roof-glass in a cold greenhouse. They soon responded by sending up a fine crop of foliage, followed by an abundance of flower spikes. The flowers were sufficiently advanced to be brought into the house for decoration towards the end of January, and the plants have continued in flower ever since, looking as if they might remain fresh and floriferous for another month.

It is this wonderful lasting quality of the bloom that has impressed me so forcibly, surpassing in this respect any other bulbous plant I know. My chance Lachenalias are apparently the common species, L. tricolor. I am anxious now to try some of the more showy hybrids extolled by *W. D.* How is it that so few bulb firms seem to stock them? I have glanced through some catalogues that lay to hand and failed to find them listed. Apparently Lachenalias are very easily grown, provided a cold greenhouse is available.

Besides their lasting quality Lachenalias have this additional advantage; they do not become leggy and unmanageable as pot subjects before the flowering period is over, like Hyacinths and Narcissi. They do not, therefore, need artificial support. The somewhat careless manner in which the bulbs were treated has revealed the way they should be grown for effect, viz., a number should be placed in a fairly large pan. A quantity of flowering spikes will then be obtained, well furnished all round with gracefully drooping and pleasingly spotted leaves—the whole making a suitable decoration for a hall table. In fact the admiration it may receive depends largely on the taste shown in the position it is allotted in the dwelling. It wants a place to itself.

Lachenalias placed near brightly-coloured Hyacinths and Tulips would not provide colour harmony and as a cut flower one could hardly imagine the Lachenalia to be a success. *J. P. Carlisle.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUMS.

The beautiful group of Dendrobiums raised chiefly in his gardens, shown by Frederick J. Hanbury, Esq., F.L.S., Brockhurst, East Grinstead, at the meeting of the Royal Horticultural Society on February 24 was of great interest. The Brockhurst strain of D. Gatton Monarch, Florence E. King and others of the large-flowered, brightly-coloured class were shown in profusely-flowered specimens, whilst the Ainsworthii and Euryalus varieties also made a fine display, and the whole served as a reminder that the season of blooming of this charming genus has commenced and these Orchids will be attractive for a long time with their fragrant blooms. Mr. Hanbury has worked long and successfully in raising novelties of Dendrobiums, including the rare D. Hanburyi (Dalhousianum × fimbriatum oculatum).

Looking back over the period that Dendrobiums have commanded attention in gardens calls to mind some of the keenest lovers of the genus, including the late Sir Trevor Lawrence, whose collection was as complete as possible in species and hybrids; the large houseful of freely flowered plants, chiefly of the Euryalus, Apollo and rubens types which the late T. B. Haywood had at Woodhatch, Reigate; the grand exhibits of the late Norman C. Cookson, Oakwood, Wylam, who raised many fine crosses from still rare species; and Richard G. Thwaites, Esq., Chessington, Streatham, who gave a great impetus to the yellow class with his D. Thwaitesiae and D. chessingtonense. Sir Jeremiah Colman, Bt., Gatton Park, has produced over seventy distinct crosses of Dendrobium, all good and some unique, Golden Ray and Gatton Sunray being two good examples of his success in breeding fine varieties.

For the introduction of the species hybridists are largely indebted to nursery firms including the late firm of Messrs. James Veitch and Sons which specialised both in species and hybrids; Messrs. Charlesworth and Co., Messrs. Sanders, and Messrs. Stuart Low and Co.

Messrs. Armstrong and Brown, Tunbridge Wells, in the long corridor connecting their Orchid houses, always have a good show of Dendrobiums, their D. Butterfly, D. Buttercup and D. Yellow Bird which are prominent in the yellow class, being striking examples. Messrs. J. Cypher and Sons, Cheltenham, also grow and flower a fine stock of Dendrobiums up to their best and at this season and later the house of many fine hybrids and superb forms of D. nobile at Cheltenham are visited by many while still later the show of D. Phalaenopsis Schröderianum will be appreciated.

Everywhere Dendrobiums are in the ascendant and are well worthy of the attention bestowed on them. An interesting reflection is that the species concerned in bringing about such wonders in the hands of the hybridist are not all showy-flowered plants.

The best yellows have been derived from the rather small D. aureum and D. signatum, and the same passed on through the D. nobile class are responsible for the bulk of our spring and summer-flowering Dendrobiums. It may not be out of place to give a warning. These lovely Dendrobes, which are so much appreciated when in flower are often neglected when out of bloom and resting. Care should be bestowed on their cultivation, the plants afforded a resting season and looked after at all seasons. *J. O'B.*

NEW HYBRID ORCHIDS.

(*Continued from February* 14, *p.* 110.)

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Eudora	C. Enid × B.-C. Marguerite Fournier	Stuart Low & Co.
Brasso-Laelio-Cattleya Dr. Barbier	B.-C. Vilmorinana × L.-C. Lucasiana	M. Maron.
Cymbidium Astra	rosefieldense × Schlegelii	Stuart Low & Co.
Cymbidium Blanche	Alexanderi × Queen of Gatton	Sir J. Colman.
Cymbidium Cormorant	Schlegelii × Lowio-grandiflorum	Sir G. Holford.
Cymbidium Dotterel	Gottianum × l'Ansonii	Sir G. Holford.
Cymbidium Evelyn	insigne × Coningsbyanum	McBean.
Cymbidium Flamingo	Alexanderi × Merlin	Sir G. Holford.
Cymbidium Fulmer	Seamew × Lowio-grandiflorum	Sir G. Holford.
Cymbidium Godwit	Gottianum × Garnet	Sir G. Holford.
Cymbidium Goosander	insigne × Merlin	Sir G. Holford.
Cymbidium Guillemot	Pauwelsii × Cygnet	Sir G. Holford.
Cymbidium Pintail	unrecorded	Sir G. Holford.
Cymbidium Plover	Pauwelsii × Lowio-grandiflorum	Sir G. Holford.
Cymbidium Redshank	Alexanderi × Redstart	Sir G. Holford.
Cymbidium Roger Sander	Gottianum × Sibyl var. Primrose	Sanders.
Cymbidium Sandpiper	Alexanderi × Seamew	Sir G. Holford.
Cymbidium Starling	Seamew × Cygnet	Sir G. Holford.
Cymbidium Wheatear	Pauwelsii × l'Ansonii	Sir G. Holford.
Cypripedium Gold Mohur	Goliath × Lady Dillon	G. F. Moore, Esq.
Cypripedium Robert Paterson	Mem. F. M. Ogilvie × Eurybiades	Flory & Black.
Cypripedium Rob Roy	Idina × chrysotoxum	H. T. Pitt, Esq.
Cypripedium S. W. Flory	Mrs. H. Jenkinson × Chardwar	Flory & Black.
Dendrobium Huia	Alpha var. Eleanor × Cybele Gatton Park variety	Sir J. Colman.
Laelio-Cattleya Cresta	L.-C. Goldcrest × C. Snow Queen	Sanders.
Laelio-Cattleya Shiela Beddington	L.-C. Britannia × C. Clotho	Sir H. S. Leon.
Odontioda Argus	Odm eximium × Oda. Sibyl	C. Cookson, Esq.
Odontioda Florida	Odm. Lilian × Oda. Dulcies	Charlesworth & Co.
Odontioda Sapphira	Odm. Jasper × Oda. Alcantara	Charlesworth & Co.
Odontoglossum Dagonet	Radiant × St. James	Charlesworth & Co.
Odontoglossum Elmar	Crethus × St. James	Charlesworth & Co.
Odontoglossum Florida	plumptonense × St. James	Charleswyrth & Co.
Odontoglossum Lustre	McNabianum × ardentissimum	Stuart Low & Co.
Odontoglossum Magnet	Lambeauianum × Lakiniae	Stuart Low & Co.
Odontonia Crusader	Odontonia Dora × Odm. crispum	Charlesworth & Co.
Odontonia Duchess of York	M. Bleuana × Odm. majesticum	Charlesworth & Co.
Odontonia Hesperia	M. Bleuana × Odm. Aphrodite	Charlesworth & Co.
Vuylstekeara Aurora	M. Bleuana × Oda. Meteor	Charlesworth & Co.
Vuylstekeara Minerva	Oda. Charlesworthii × M. Bleuana	Charlesworth & Co.

THE CALANTHE.

I doubt whether there is a more beautiful or serviceable species of Orchid than the Calanthe. For winter decoration it is invaluable, and with a little careful treatment it may be grown in any establishment where a house is furnished with the necessary heating apparatus. The method of culture I have found best is as follows:—The pseudo-bulbs should be cleansed with insecticide and potted, so soon as they have made new growths of about one-and-a-half inch long, in a compost of equal parts good fibrous loam and peat, a liberal quantity of dry, sifted cow manure, and sufficient silver sand and crushed bricks to render the compost open. Place three good bulbs in a six-inch pot half filled with clean crocks, as good drainage is essential; pot to within half-an-inch of the rim, with the base of the new growth just touching the compost, and pointing towards the rim of the pot to allow for development. Some growers advocate tying the pseudo-bulbs to small stakes, but this I find is unnecessary if enough old roots are left on the pseudo-bulbs to hold them firm. Water with tepid water and place the pots in a house with a temperature of 65°. Great care should be taken in watering until the new growths have become well rooted, but maintain a moist atmosphere by syringing between the pots and damping the walls and floors, and on no account damp the foliage of the new growths or "spot" will appear. Shade the house during sunshine and admit air carefully, maintaining a high and regular temperature at all times during growth. Keep thrip, scale, or other pests in check.

So soon as the pots are full of roots a little stimulant may be given; a mixture of soot-water, and liquid cow manure I find is most beneficial, as also is damping between the pots with a similar mixture. The flower spikes will begin to appear in August or September, and so soon as the basal flowers expand water should gradually be withheld until all are opened, when watering should cease and the house be kept dry, or the flowers will become spotted. I have grown spikes nearly four feet long and with upwards of forty blooms on an inflorescence. Calanthe Veitchii, C. William Murray, C. Bryan, and C. luteo-rubra I have found excellent for home decoration. As the plants pass out of flower remove the spikes to within an inch or two of the pseudo-bulb and place the pots in a warm, dry place, withholding water until potting time comes round again. *A. J. Turner, Morcton Paddox Gardens.*

FLORISTS' FLOWERS.

WINTER-FLOWERING STOCKS.

Suitable varieties of Winter-flowering Stocks are delightful for the production of sweetly-scented flowers during the winter. The culture of the plants is easy. From plants raised from seeds sown from June to August and the seedlings grown on in cool conditions, a bountiful supply of flowers may be obtained from Christmas onwards.

Seeds of Stocks germinate freely. Prick off the young plants so soon as they can be handled, and water them with great care. Do not spray them overhead or damping may follow.

Grow the plants in a rich, open loam, mixed with crushed mortar. At the final potting three plants may be placed in each receptacle as many of these Stocks do not branch very freely.

There are numbers of varieties which may be grown for winter-flowering, and amongst the best are Christmas Pink, which attains to a height of eighteen inches and produces long spikes of pink flowers, and Beauty of Nice, which I have found the most useful of all Stocks for

winter-flowering; several colours come true from seeds and the pale salmon-pink, old rose, and deep old rose shades are very attractive. This Stock grows about two feet in height. A very useful white Stock is All the Year Round, which produces numerous, highly-scented blossoms over a considerable period. The deep green Wall-flower-leaved foliage adds to the beauty of this variety, which is of a dwarf habit, and owing to its persistent flowering should be grown where white flowers are in demand. Riviera Market is a popular variety, but my experience has been that it is difficult to secure a strain of seeds which will produce a reasonable number of double-flowering plants. *C. Ruse, The Hyde Gardens, Near Luton.*

NEW PERPETUAL-FLOWERING CARNATIONS.

The following new varieties of perpetual-flowering Carnations were registered by Messrs. Allwood Bros. with the British Carnation Society on January 12, 1925:—

Sunset: a seedling variety with Apricot-coloured flowers, lightly flaked with old Rose. The bloom is four-and-a-half inches in diameter and possesses mild fragrance. The habit of the plant is good and the flower stem stiff and strong.

Butterfly: another seedling with white flowers lightly overlaid with crimson-claret. The bloom measures three-and-a-half inches across and is also fragrant, possessing strong Clove perfume; the habit of the plant is strong and the flower stems are also strong and erect.

Master Michael Stoop: a variety of bright clear cerise colour. The flowers are four inches across and fragrant. The habit of the plant is compact and robust and the flower stem is strong and free. It is recommended as a commercial variety for the supply of cut blooms for market.

Beauty of Durham: a seedling of bright salmon-rose colour, the bloom measuring three inches across. The flowers are fragrant and the variety is said to be a great improvement on Lady Allington.

Shot Silk: a seedling of Indian-Chestnut colour flaked with deep salmon-red. The bloom measures three-and-a-half inches in diameter and is fragrant. It is a very quick-growing, compact, free-flowering variety.

Cameron of Wivelsfield: a seedling of Rose Doré, of a pink colour. The bloom measures four inches in diameter and has a rich Clove scent. The plant is a strong grower and exceptionally free in flowering, producing the blooms on strong, erect stems. The flowers of this variety are said to be larger and the colour clearer than that of Malcolm or Rose Doré and the plant is also much freer in flowering.

HARDY FLOWER BORDER.

ASTILBES.

The Astilbes are very closely allied to, and much resemble the Spiraeas in general appearance. They are most accommodating plants in regard to soil and situation, and quickly become established when planted. Soil of a rich, loamy texture, with sufficient peat incorporated to hold moisture is best suited to them. An ideal spot for planting Astilbes is near a Water-Lily pond or in the bog garden, in sun or partial shade. They quickly become established and present a most pleasing, graceful, and majestic appearance, producing an abundance of foliage and numerous plumes of white, rose, or coral-red flowers.

Astilbes may be planted any time during the autumn and spring, and may be associated with such bulbs as Daffodils, Crocuses, Scillas, or other Spring-flowering dwarf plants to cover the bare spaces during the resting season of the Astilbes. They flower from July to autumn, grow from two feet to four feet tall, and if in a naturally moist soil, or in the borders, freely supplied with water during spells of dry weather, will produce from ten to fifteen spikes to a plant.

The following are new hybrids, the result of crossing A. Davidii with Spiraea japonica and S. astilboides:—Brunhilde, pale creamy-pink, height three feet; Betsy Cuperus, a variety well furnished with pure white flowers that have a pinkish centre, height five feet; Gruno, a variety producing pretty, branching plumes of salmon-pink flowers, height three feet; Gloria, a plant of neat, compact habit, producing panicles of rich rose-coloured flowers, height two feet; Juno, an effective, purplish-pink variety, very early in flowering—June, height three feet; King Albert, a variety that produces tall, handsome flower stems of a reddish colour, and pyramidal inflorescences of creamy-white flowers, height from five feet to seven feet; Kriemhilde, a variety with handsome plumes of clear rose-coloured flowers, height three feet; Moerheimi, a pretty, creamy-white variety, freely branched and very effective, height three feet; and Salland, a good companion to King Albert, growing five feet to six feet tall, and producing handsome, feathery plumes of bright red flowers.

Other meritorious varieties, varying in shades from pink to rose and Lilac, are: Ceres, Meta Immink, Opal, Pink Pearl, Prof. Van der Weilan, rosea magnifica, Davidii, grandis, and the large-leaved rivularis gigantea, with numerous well-branched stems of small, whitish flowers. *W. Logan.*

NOTICES OF BOOKS.

Cultivated Plants in Ancient Egypt.

There is no scarcity of literature on the subject of Egyptian antiquities, and the recent discovery of Tut-Ankh-Amen's tomb, with its extraordinary wealth of contemporary art treasures in an almost perfect state of preservation, caused a considerable impetus to general interest in the subject and a corresponding increase in the output of popular literature. There are, however, few works which deal from a scientific point of view with the flora, either indigenous or cultivated, of ancient Egypt, and the present work*, of which only the first volume is as yet published, is all the more welcome.

The author, Dr. Ludwig Keimer, gracefully acknowledges his indebtedness to all his predecessors, especially to the patient research work done in connection with Egyptian plant-remains over a period of something like half-a-century by the well-known botanist, Professor G. Schweinfurth, who supplies a preface to the book.

Although the graphic arts had attained a high state of development in Egypt very early in the history of that country as known to us, yet the identification of representations of fruits and flowers is not in all cases easy, owing to the fact that the features of certain very popular plants, or those which acquired a religious or heraldic significance—notably, of course, the so-called "Lotus"—became in course of time so hopelessly stereotyped that it is difficult to discover what their living prototypes were really like. Many botanists now consider that the true Egyptian Lotus was Nelumbium speciosum, but this was not a native of Egypt, and it is probable that the name "Lotus" was also applied to other Water-Lilies, particularly to Nymphaea caerulea.

The Ivy and the Convolvulus, though not very much alike when seen growing, present endless puzzles of identification to the botanist seeking to expound ancient Egyptian drawings. As a matter of fact, Ivy is not found in any very early paintings, the "Ivy" mentioned by Loret in his *Flore Pharaonique* being undoubtedly Convolvulus, probably C. arvensis. On a mummy-case of the twentieth dynasty, in the Cairo Museum, however (of which a reproduction is given in the book), a trail of leaves is represented which—though this again *may* be intended for some species of Convolvulus—shows all the characteristics of Ivy, and is considered by Professor Schweinfurth to be undoubtedly Hedera Helix.

On the other hand, in the case of certain plants, identification is considerably aided by the discovery, in many tombs, in a marvellous state of preservation, owing to the dryness of the climate, of cereals and fruit to be used as food for the deceased, and of nosegays of flowers for his delectation in the underworld.

Dr. Keimer's book is arranged in sections, the first portion of each of which is contained in the volume under review, so that when the book is completed the volumes can be taken to pieces for binding and the different sections joined in their proper order. The names of the plants are arranged according to families, and to each plant mentioned a wealth of information is attached, in many cases enriched by excellent reproductions of ancient drawings. A supplement consists of an exhaustive bibliography referring to each species described, and a second supplement describes and illustrates the hieroglyphs used to distinguish them. This is in facsimile handwriting, presumably to avoid the necessity of having individual blocks made for each hieroglyph, and dispersing them among the text.

To the Egyptologist this work will be invaluable for reference, comprising as it does the very latest research on the subject; and it will also prove of the greatest interest to every botanist who is concerned with the history of cultivated plants. All his readers will gratefully acknowledge their indebtedness to Dr. Keimer for this monumental piece of work.

PUBLIC PARKS AND GARDENS.

A proposal is under consideration to construct four hard tennis courts in Mill Hill Park, London.

The Corporation of Lowestoft will apply to the Ministry of Health for sanction to a loan of £4,325 for the purchase of the Normanton Hall estate for a recreation ground.

Manchester Corporation Park Committee has received sanction to construct an open-air bathing and paddling pool in Cringle Fields Park.

Several important matters affecting the Parks Department were before the town council of Edinburgh at their meeting on March 5. The principal one of these related to a proposal to purchase land at the Braid Hills golf course at the price of £9,000. Some opposition arose, and an amendment that the proposal be disapproved of was moved. Ultimately the purchase was unanimously agreed to. At present the corporation pays a considerable rent for the land. The report of the Parks Committee recommending the expenditure of £3,760 on various works in the different parks was referred back to the committee for further consideration. The Committee also recommended the provision of a new bandstand in the West Princes Street Gardens at a cost of £1,500, but this was disapproved of by twenty-one votes to twenty-four. Considerable debate took place on a recommendation that no action be taken in a proposal to provide Sunday music in the parks. A motion to the effect that such music be arranged was in the end defeated by thirty-six votes to eighteen. It was stated in the course of the discussion that this was the fourth time within four years that this matter had come before the council.

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* *Die Gartenpflanzen im alten Aegypten*, von Ludwig Keimer, mit einem Geleitwort von Georg Schweinfurth. I. Band. Hoffman & Campe Verlag, Hamburg Berlin.

EDITORIAL NOTICES.

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Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

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THE GARDEN IN ANTIQUITY.

III.—ASSYRIAN ACHIEVEMENTS.

TWO great nations loom up through the mists of antiquity as claimants for the honour of being the first historical pioneers in garden-craft. Each is of high renown for its splendid achievements in science and art, religion and letters, and each did great things for the advancement of agriculture, floriculture, and the allied industries. Assyria may be regarded as the fountain head of the stream which made its fertilising influence felt in Babylonia and Media, Persia and Syria; Egypt as rendering a similar service to more western lands. The streams eventually combined and flowed on together through Europe; Greece and Italy first feeling the effects and transmitting them eventually to every country in the continent. But to neither of these two rivals belongs the honour which fell to the lot of Persia of supplying a name for the garden or park which should be accepted, like the word Paradise, into the word-coinage of the world. How matters stood in the languages spoken by the Aryans we shall learn later.

Let us first turn to Assyria, and try to learn something of the position of horticulture there in the earliest times. The Assyrians were among the first inhabitants of the East whose knowledge of this subject can be directly illustrated by reference to the existing remains of antiquity. From their sculptures and picture-writing we may learn both what their gardens were called, and how they were cultivated. And, since the people were speakers of a language which was closely related to that of the Hebrews and other Semitic people, we are able to confirm what we find on their tablets and monuments by reference to the speech of the Arabs and the writings of the Hebrews. We know, for example, that the Hebrew word for garden was *gan*. This remains in modern Hebrew as *gannah*, and with slight variations is common to Arabic and Aramaic, Syriac, and Ethiopic. It occurs many times in the Old Testament and is found on ancient Phœnician inscriptions, as well as in the Koran. When therefore, the student finds the word *ginu* or *ginnahi* on the inscriptions of ancient Assyria relating to gardens he at once sees the close connection between that term and such forms as *jannat*, *ginna*, and *gannah* in Hebrew, Aramaic or Arabic.

We further know that the word as found in the Scriptures may be derived from a verb, *janan*, which means to surround, cover or defend, and when we turn to the picture-writing of Assyria we find that this is exactly the idea which the cuneiform character conveys. The garden was an enclosure, or preserve, a piece of land surrounded by a wall, fence or hedge to protect it from being despoiled. Let us take, in the first place, a few general facts.

Much has been written, alike by early travellers and modern explorers, on the fertility of the soil of Assyria. The former were ever loud in its praise. Herodotus, the father of history (born nearly five hundred years B.C.) states that in his day no part of the known world produced grain of such excellent quality. True, the Vine, the Olive, and the Fig, which were so luxuriant in Greece, were wanting, but the Corn, by way of recompense, yielded two, and even three, hundredfold, while the Palm grew naturally everywhere.

In those days, as might be expected, thought rested rather on the serviceable than the ornamental, and Wheat was mentioned when Lilies were overlooked by the traveller. But we shall see in due course that the land which produced the one yielded also the other, and possibly derived one of its names, *Susiana* from *Susan* or *Shusan*, a Lily. Xenophon confirms what Herodotus had affirmed: "In these villages was plenty of Corn and wine made from Dates. As to the Dates themselves (he states), such as those we see in Greece were here put aside for the use of the servants; but those which were laid by for their masters were choice fruit remarkable for beauty and size; their colour was not unlike amber, and some of these they dried and preserved as sweetmeats." Modern writers call them golden.

Recent travellers agree with these ancient authors respecting the capacity of the soil, but have often to deplore the results which have followed oppression and neglect. The cultivated portions, we are told, still show that the region has all the fertility which Herodotus and Xenophon ascribed to it. Cultivation is in many places now the exception instead of the rule. In the place of "the luxuriant fields, the groves and gardens of former times, nothing now meets the eye but an arid waste." While the Date Palm, on the one hand, and Barley, Millet, Sesame, and many kinds of fruits on the other, came to high perfection, there were to be found in addition such trees as the Acacia and Poplar, the Tamarisk and Pomegranate.

Moreover, Oranges and Citrons, Apples and Pears, Figs and Grapes were successfully cultivated in gardens and orchards from very early times. If we turn to the Assyrian monuments we find the following among other flowers, fruits and trees pourtrayed. The Date Palm is one of the trees in most constant evidence. It is sometimes extremely conventional in form, but at others there is a close approximation to the natural habit. Next comes the Vine, and with it the Fig. Since these do not appear to have been found growing in a free state throughout the country in the time of Herodotus it indicates that they must have been imported ages before and brought to a high state of cultivation in the vineyards and gardens. De Candolle thus writes respecting the former: "The vine grows wild in the temperate regions of Western Asia, Southern Europe, Algeria and Morocco. It is especially in the Pontus, in Armenia, to the south of the Caucasus and of the Caspian Sea, that it grows with the luxuriant wildness of a tropical creeper, clinging to tall trees and producing abundant fruit without pruning or cultivation. Its vigorous growth is mentioned in Bactriana, Cabul, Kashmir, and even in Badak-Khan to the north of the Hindu Koosh. Of course it is a question whether the plants found there, as elsewhere, are not sprung from seeds carried from vineyards by birds . . . . As we advance towards India and Arabia, Europe and the north of Africa, we frequently find in floras the expression that the vine is 'Subspontaneous,' perhaps wild, or become wild." What is true of the vine is also true of the Olive and the Fig. But whether indigenous or not, the Fig and the Vine were cultivated in early Assyria with care.

The Pomegranate was another garden fruit, as shown by the fact that it is often figured on the monuments. It is a native of Persia and the surrounding regions, and has from remote ages played an important part in the religious rites and ceremonies of Eastern lands, as well as serving to supply the bodily needs of men. Some writers affirm that the Banana was also grown by the Assyrians, since certain objects represented on the sculptures more nearly resemble bunches of that fruit than any other known object. I see no reason why this popular Eastern plant should not have been in cultivation. The antiquity and wild character of the Banana in Asia are, as De Candolle remarks, incontestable facts. It has several Sanskrit names, and the specific name, Musa paradisiaca, is due to the idea that this was one of the trees of Paradise, and even supplied the leaves which Eve used as her covering. The Reed, Papyrus, Fir tree and other plants are figured, but these were not necessarily cultivated. The Lily, however, was undoubtedly grown in gardens. The Madonna Lily is found in South Europe, Palestine, Northern Syria and the Caucasus, and "there is little room for doubt that so sweet and beautiful a flower, with a bulb so amenable to cultivation, early found its way to the gardens of the Assyrian monarchs."

Another fact of interest has been well set forth by Professor Sayce. It is significant (he states) that the garden in which Semitic tradition placed the first man "was in the land of Eden, and that the picture of a garden or plantation is one of the primitive hieroglyphs of Sumer," the land of the Sumerians. "The beginnings of Babylonian civilization were bound up with the cultivation of the soil; the reclamation of the great alluvial plain was at once the effect and the cause of Sumerian culture. Sumerian culture, in fact, was at the outset essentially that of an agricultural people."

From these general statements we may pass on in our next chapter to the study of certain historical facts and statements of a distinct and definite character. We shall then find monarchs recording their own efforts to introduce plants from conquered lands, and telling of the gardens and parks where they cultivated them, and by means of which they beautified their own cities and palaces. *Hilderic Friend.*

Flowering of the Almond on Wandsworth Common.—Mr. H. Teatherton informs us that the Almond tree on Wandsworth Common, S.W., in which the late Mr. R. Hooper Pearson was so greatly interested, opened its first blossoms this year on February 9 as compared with March 22 last year; February 22, 1923; March 6, 1922; February 22, 1921; February 13, 1920; and March 14, 1919. February 9 is therefore the earliest date recorded during the last seven years.

TREES AND SHRUBS.

AZARA GILLIESII.

The Azaras are attractive, evergreen shrubs, but as they are natives of Chili they are only suitable for general cultivation in the open in the warmer parts of the country. For the south and west of England, Wales, Ireland, and the west coast of Scotland, the Azaras are valuable outdoor shrubs. In most gardens there are warm, sheltered positions, on south and west walls, where shrubs, on the border-line of hardiness, such as the Azaras, may be cultivated successfully. For some years now we have not had a really severe winter, and at Kew, for example, A. microphylla, admittedly the hardiest member of the genus, has grown to a height of twelve feet, forming a beautiful bush in the open. The last winter during which this species was killed to the ground was during 1904–05.

The subject of the illustration (Fig. 71), A. Gilliesii, is the most showy of the Azaras when in flower. The blooms are borne in racemes growing from the axils of the leaves, the attractive portion being the comparatively long, creamy-yellow stamens. The dark green leaves are one-and-a-half inch to two inches long, oval in shape, and coarsely serrate, resembling those of some Hollies. The flowering season is April and May. Even on a wall A. Gilliesii is sometimes damaged by frosts, but it usually recovers quickly.

A. integrifolia is the most valuable species to cultivate as an evergreen bush. The small, shining, dark-green leaves, half-an-inch long, freely clothe the frond-like branches, giving a very elegant and charming effect, not unlike, but more light and graceful than that of Cotoneaster horizontalis. The small flowers, with conspicuous golden-yellow stamens, were open on February 21, rather earlier than usual, because of the mild weather. They are pleasingly fragrant.

Three other species are in cultivation at Kew, growing on walls, in recesses or bays round the greenhouses, and in the Winter Garden (Temperate House). A. Browniae, with clusters of yellow stamens, is very beautiful during the second half of February in a recess outside the Mexican House; A. dentata and A. integrifolia are the others.

The Azaras are readily increased by cuttings made of moderately firm young shoots, in late summer, and inserted in sand or sandy soil in a slightly-heated propagating case. In common with other shrubs on the border line of hardiness, the ground for Azaras should be fairly light and well drained, in order that water may drain away quickly in winter. *A. Osborn.*

COTONEASTER ROTUNDIFOLIA.

Whilst on a recent visit to Kew Gardens my attention was attracted to what was presumably a large bush of scarlet flowers, but I discovered on close inspection that it was a big, sprawling bush of Cotoneaster rotundifolia covered with its large scarlet berries. Judging by the large number of berries, I conclude that the fruits of this Cotoneaster are not much sought after by birds, and I should imagine that young, shapely plants would be very handsome in the shrubbery at this season. *T.*

RHODODENDRON PRAECOX.

Now that the earlier R. Nobleanum is passing out of flower (the plants have been extra beautiful and early this year) R. praecox is proving a worthy successor, and by the middle of February was in the full beauty of its rosy-purple dress. The trusses of flowers are small compared with those of R. Nobleanum, but lack in size is compensated by numbers, for the plants are covered from top to bottom with small flower trusses. At Culzean Gardens this Rhododendron grows to a height of six to eight feet, and owing to the mildness of our climate is seldom damaged by frost, although it flowers so early, whereas in colder districts it is often sadly disfigured, even when flowering at a much later date. *A. T. Harrison. Culzean Castle Gardens, Ayrshire.*

ABIES NUMIDICA.

The Algerian Fir is by no means common in this country, especially large specimens, but I had the pleasure of seeing one a few weeks ago in Stoke Park, Slough, which must have reached the limits of height for the species. I estimated the stature of the tree to be seventy feet, and it had a wide spread of branches, reaching down almost to the ground. The height of the tree is variously stated as forty-five feet to sixty feet and seventy feet, with a girth of eight feet. The leaves are of a dark shining green above, with a few lines of stomata there, while the under surface has the two customary white bands of stomata. The leaves are short, stiff and very numerous on the upper surface of the branches or twigs, which they hide. For this reason the species has been compared with A. Nordmanniana and A. Pinsapo, indeed, it has been named A. Pinsapo var. baborensis, of Cosson. The varietal name refers to Mount Babor in Algeria, to which mountain it is stated to be confined, though some authorities admit it to other parts of the Kabylia range, where the Atlas Cedar occurs. It was introduced to cultivation in 1862, so that Loudon does not mention it. The tree in question must have been one of the earliest to be planted in this country. The specific name comes from the Numidia of the Romans. *J. F.*

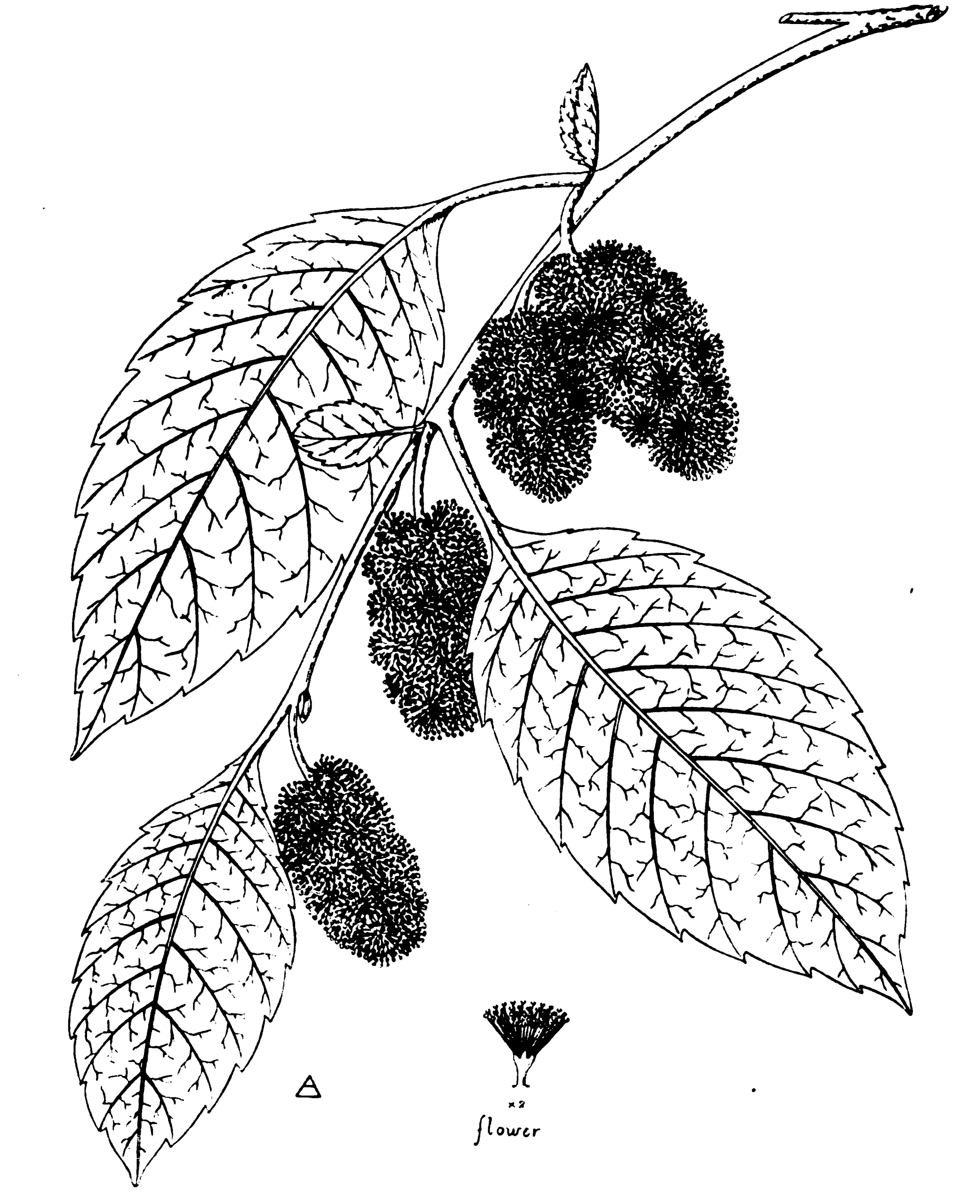

FIG. 71.—AZARA GILLIESII.

DRIMYS WINTERI.

This fine evergreen shrub attains its maximum development in the sheltered gardens of the west, where there are many specimens ranging in height from twenty feet to thirty feet. When out of flower it is distinctly ornamental, the red-tinged stems being clothed with pale green, glaucous, elliptic, lanceolate leaves, six inches to eight inches long. The flowers are borne on the growths of the previous year, and the loose terminal clusters are from six inches to ten inches across. The blooms are creamy-white, an inch in diameter, and fragrant. With age the flat, strap-shaped petals recurve.

When planted out in a cool greenhouse, Drimys Winteri commences to bloom at the end of February, and when space is restricted—as when growing against a wall or trained at some little distance from the roof—it may be pruned after flowering to keep it within bounds. To preserve an evenly balanced tree, strong run-a-way growths should be repressed. *Fred. W. Jeffery.*

ALPINE GARDEN.

RANUNCULUS RUTAEFOLIUS.

THE genus Ranunculus provides us with a number of good plants for the rock garden, although some of the most beautiful are not the most obliging in their requirements, and a few need to be grown in a moraine. Some of the more accommodating species are not common in gardens, and among these is the subject of this note, the Rue-leaved Crowfoot, Ranunculus rutaefolius.

This species is described in some catalogues as having large, broad leaves, but this is a misleading description. The foliage, although broad in reality, is so finely divided that it renders the title of "Rue-leaved" quite appropriate, and it is quite distinct from that of many of its allies.

The flowers are white with a greenish centre, and, although not of the striking beauty of those of R. glacialis or R. alpestris, the blooms are quite attractive. The plant is of rather trailing or prostrate habit and looks very well indeed on a flat part of the rock garden. It grows only a few inches high, its stature depending on the nature of the soil and amount of moisture. It may be grown well in a moraine, especially with some water flowing underneath in summer, but there are many who do not possess a moraine, and they will be glad to try it and will be able to succeed with it in loam, sand, and grit on a level part of the rockery. I have grown and flowered the plant successfully in such a position and in full sun. The soil should be well drained and copious supplies of clear water should be given it during spring and summer, and also in autumn, should the weather be dry.

Propagation is effected by division of large plants, but this must be carefully performed, and where ripened seeds are produced, raising seedlings is a preferable method, as many plants die after division. *S. Arnott.*

FORESTRY.

THE GOVERNMENT FORESTRY POLICY.

IN connection with the present official scheme of afforestation, it is the opinion of many landowners and foresters, that not only is there a neglect of hard-wooded trees but that exotic Conifers, whose value in this country in a commercial sense is unproved, are being planted on much too extensive a scale. Every dealer in home-grown timber knows that the business transacted in native hardwoods is about double that of soft woods, indeed, in not a few cases, in England at least, the dealings are entirely restricted to the former. On consulting several timber merchants and saw millers in London, it was found that fully sixty-five per cent. of the native woods dealt with belonged to the hardwood section.

In connection with tree planting, there is a still more serious omission, in the almost wholesale use of Coniferous trees whose value in this country in a purely economic sense is quite unproved. Reference is specially made to the too frequent use of Sitka Spruce, Douglas Fir, and Japanese Larch, the excellent quality of whose timber in their native countries is admitted, but as to how these same trees will turn out after a fair trial here is problematic and remains to be seen. British-grown timber of none of these trees has arrived at anything approaching maturity that of the Douglas Fir, which most nearly approaches that state, not having come up to expectation in that particular respect.

It must be remembered that in the case of several exotic Conifers, whose timber in their native countries is of acknowledged quality, the same species when cultivated in Britain, where they thrive admirably, produce wood that is practically worthless for constructive purposes. Take the case of the Sitka Spruce, which is planted by the million; we have no surety that it will prove of economic value when brought under cultivation in this country, though in America the wood is of first-class importance. Granted that a few individual specimen trees which have been planted under the most favourable conditions in our parks and ornamental grounds have attained to fair dimensions, but in-so-far as our knowledge of home-grown timber of the tree is concerned, we know practically nothing, and what little we do know is not very encouraging.

The late Mr. Elwes in reply to a letter of mine, with reference to the timber of this Spruce, wrote:—"It has a tendency to produce large and spreading branches which make the timber very knotty, and I have not discovered, or been able to hear of any single place in Great Britain where a tree of this species has produced timber now, or ever, likely to compare with the selected logs grown in the very dense and humid forests of the North-west coast of America from which the timber is imported. The only pure plantation of the Sitka Spruce that I know of, dense enough to clean itself of branches, is on the Durris estate, in Kincardineshire, and I think that Mr. D. Munro, of Banchory, who knows more about softwoods than either you or I, would agree with me that this plantation is never likely to produce high class timber of large size, and would pay better if cut for prop-wood than it will do if allowed to stand. On my own estate the Sitka Spruce suffers so badly from spring frosts that it is a worthless tree." Though not inclined to condemn this Spruce to the same extent as Mr. Elwes, I may state from a lengthened experience of the tree and a knowledge of how it has done in several pure plantations, including that at Gravetye, that there is nothing in its behaviour as a forest tree to warrant its being planted to the extent that has been the case of late.

Coming to the Douglas Fir as a profitable timber tree in this country, the quantity is certainly far ahead of that of any Coniferous tree of which I have kept a record—240 cubic feet in forty years, or nearly five feet per year for half a century—but as regards quality I think everyone who has had an opportunity of converting and using it will agree with me that the results have not come up to expectations. Then, the Douglas Fir has been proved to be of little value for planting on exposed ground in this country, where the common Larch and Scotch Pine produce valuable timber, sheltered valleys, and deep soil seeming to be the chief requirements when the tree is brought under cultivation. I know of no other Coniferous tree that loses its leading shoots so quickly on exposed ground as does the Douglas Fir, and particularly when planted in conjunction with other species in our home woods. After seeing this tree thriving and attaining to a large size on the Capilano mountain, at Vancouver, British Columbia, I am surprised at its behaviour in this country, under much more favourable conditions. Of late years in particular the Douglas Fir has suffered somewhat severely from insect and fungous attacks when grown in our woods and plantations.

Several experiments have been undertaken with home-grown timber of the Douglas Fir, for railway sleepers, temporary buildings, fencing and the like, but in no case with which I am acquainted have the results been particularly encouraging.

In the Japanese Larch we have, there is little doubt, a good all-round tree of rapid growth, that, for a time at least, will be less subject to disease than the European species, but that it will ever prove so valuable a tree for general afforesting purposes in this country is open to doubt and requires proving. It is by no means free from the cankerous disease to which the commonly cultivated species is so liable, while it suffers greatly from insect attacks, and is liable to be injured from frost when cultivated in this country. As to the value of these three trees for large afforesting schemes in Great Britain they have, so far at least, no special claims that entitle them to be so extensively experimented with as is at present the case, and as to the results in future years these must be highly speculative.

In the common Larch, Scotch Pine, and Spruce we have long-tried Coniferous trees that have been found suitable for planting in all conditions of sites and soils in this country, while the timber produced is at least of fair commercial value. These older species, it must be admitted, are capable of thriving over a more extensive area of soils and situations than the later introductions there being few tracts of land, either at high or low altitudes, where the sturdy native Pine and common Larch will not thrive and produce a fair volume of valuable timber. The Spruce is invaluable for planting low-lying and damp ground and in conjunction with the others form a trio that for extensive planting have few equals.

In every scheme of afforestation, therefore, the three trees which originally formed the back-bone of our woods and forests must on no account give way before the later introductions, the former being in the category of well tried, while the Sitka Spruce, Douglas Fir, and Japanese Larch are, comparatively speaking, only on trial. By all means plant these kinds, but only in subordinate conjunction with the older and well tried species *A. D. Webster.*

GARDENS AT THE IDEAL HOME EXHIBITION.

AN interesting part of the Ideal Home Exhibition at Olympia is the garden section, to which a large annexe is devoted, as in former years. Regarding the section as a whole it is not so attractive as on previous occasions, as it is sadly lacking in colour. We fully appreciate the difficulties attaching to the laying-out and planting of gardens for an exhibition, and we know these difficulties have been accentuated by the unpleasant weather experienced for so long a time; nevertheless, we fear many visitors will go away with the idea that certain kinds of gardens are drab, colourless affairs, while others will wonder how it is that quantities of stone or imitations of bits of moorland come to be dignified by the name of "garden."

One very bright spot in the garden section and the great attraction of this part of the exhibition is provided by Messrs. James Carter and Co., whose Riviera garden is a delightful piece of work. In design, planting, and lighting effects it is a sunny garden, therefore, it is small wonder that crowds of people feast their eyes on the charming picture (Fig. 72) Mr. Bard has produced. The terrace and its pretty tea house suggest sunny weather, and the suggestion is emphasized by the bold grouping of King Alfred and other Daffodils below the terrace, by the pleasant fountain and the waterfall, and by the beds of Narcissi, Cinerarias, Dielytra, and Prunus triloba. These beds are on the lawn which forms the foreground, and is separated from the middle terrace by a formal water garden fed by the waterfall above. Cupressus and other evergreen trees and shrubs flank the exhibit and serve to bring into bold relief the groups of flowering Cherries, while the little balcony at the back of all suggested that from it and the tea house a view of the sea might be obtained

Messrs. J. Russell and Co. contribute a bright border of flowering shrubs in which are Wistarias, Laburnums, Lilacs, Azaleas, and Deutzias, with Funkias and Primula Juliana in the foreground. Messrs. J. Cheal and Sons also have a bright border in which Viburnum Carlesii is a lovely and fragrant attraction, accompanied by Lilacs, Berberis japonica, Azalea mollis in variety, Hamamelis, and Japanese Maples. This firm has also a formal garden, Yew-hedged and flag-paved. Within this are beds of Hyacinths set in grass, clipped trees at intervals, and flowering shrubs under the low terrace.

Messrs. Maxwell and Beale have a formal garden with clipped trees, a sundial and beds of Tulips; beyond this is a rock garden with gray stones, cleverly placed, and a thin planting of suitable subjects.

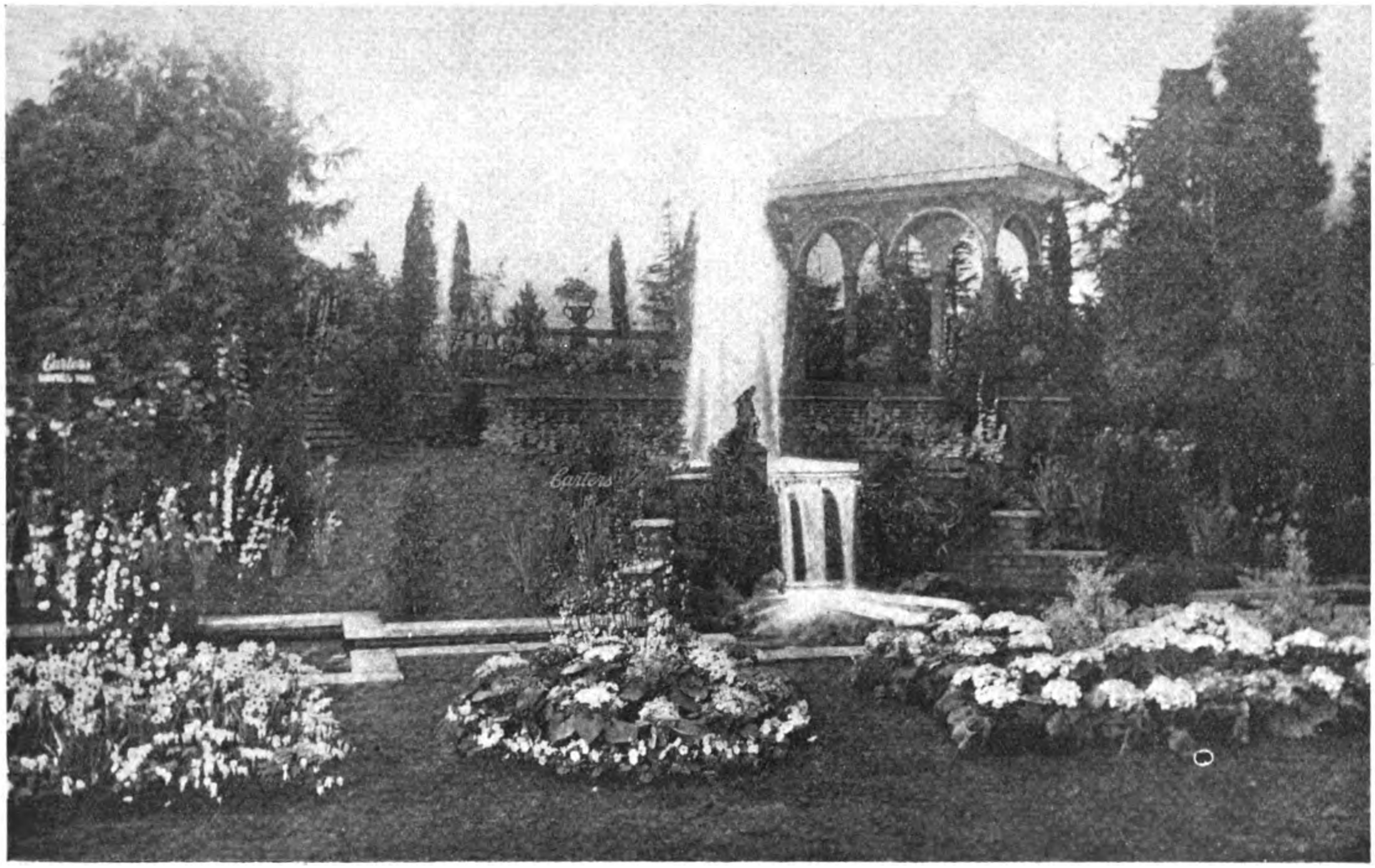

FIG. 72.—MESSRS. JAS. CARTER AND CO.'S "RIVIERA" GARDEN AT THE IDEAL HOME EXHIBITION.

The Orpington Nurseries have a rock and Heath garden with pools of water, Primulas and hardy Cyclamens—a subdued scene with a quiet beauty of its own.

Mr. Reginald Winder's Rose garden is quite good. This is enclosed by trellis work for the display of rambler Roses, and there are connecting chains for Rose festoons. Within this enclosure the paths are of old, dull, red brick, and in the grass plots on either side are beds of Roses. Mr. Winder has done his best to display the national flower, but the season has not been kind to forced Roses, consequently the beds are thinly planted although the plants carry fine flowers. In summer such a garden with its full complement of Roses would be a charming feature. Mr. E. Dixon has planned and planted one of his formal gardens of hexagonal shape surrounded by raised banks on which Wallflowers, Skimmias, Rhododendrons, etc., are planted, with interior supporting dry walls for alpines.

The Central Garden Supplies, Ltd., have attempted, with no small success, to show what the average man may accomplish in a modest space. There is a lawn with ornamental trees and shrubs, the latter including Rhododendron praecox. At the end there is a modest rock garden with a tiny path that permits the owner to inspect and care for his alpine plants, and it is wonderful what a goodly collection of alpines may be grown in a comparatively small space. A bold planting of Iris reticulata is a fine feature of the exhibit.

Mr. G. G. Whitelegg has an attractive garden exhibit consisting of a terrace and pergola: a central formal water garden, set in a closely clipped lawn, and flanked by borders of flowering trees and shrubs; while at the lower end is a rock garden, well designed and pleasingly planted. The whole of the central portion is enclosed by a low Yew hedge. The trees and shrubs provide a fine feature and include choice flowering Cherries (Cerasus Hisakura), Deutzias, Viburnum Carlesii, the delightful dwarf Azalea Hidomanyo and A. Hinodigeri, some fine plants of A. Anthony Koster, Cytisus praecox and many another graceful or showy subject.

Messrs. Allwood Bros.' formal garden has a tea house at one end and a fine pair of iron gates at the other, but, alas, the gates are kept closed. Without the garden, set in green sward, this firm displays its specialities in Carnations and varieties of Dianthus Allwoodii, planted in beds, while ornamental bowls on the walls behind carry their quota of attractive Carnations.

Other exhibitors include Messrs. Reamsbottom, who show Anemones; Mr. Pinney, notable for Violets and Primulas; and Messrs. Clayton and Hammond, who show to what numerous uses stone may be put in a garden—seats, terraces, rock garden, etc.

A Japanese tea garden is a new feature of this part of the exhibition and it has been very prettily and pleasingly designed by Mr. Bard, who was also responsible, we believe, for the planting of the village green in the "Hamlet of Heart's Desire."

MARKET FRUIT GARDEN.

FEBRUARY added yet another to the long succession of wet months. The weather was mild but thoroughly unsettled, gales and heavy rain being of frequent occurrence. At my place 4.11 inches of rain fell on eighteen days, and low-lying land was again flooded. Up to the present, beyond making work difficult and throwing much of it into arrears, the heavy rainfall may not have done fruit-growers actual harm; but an improvement is now urgently desired. It is a forward season. In a few days, if the mild conditions continue, some market varieties of Plums will be in bloom in my southern locality. The Myrobalan Plum was in full flower on February 22, more than a month earlier than last year. Pears are forward in bud, and even Apples of some varieties have just broken their buds. Thus it is very desirable that work should now be pushed on and arrears overtaken. Pruning is not nearly finished, and we shall soon be in the thick of the spring spraying, hoeing and horse cultivation. Everything will want doing at once. I have not met any grower or farmer who can remember such a wet and difficult winter. It has often been impossible to find profitable employment for the men, and horses have to be idle day after day. There is comfort, however, in the prospect of a profuse show of bloom on Apples, Pears, and Plums, tempered by some anxiety as to its fate in such an early season.

Spraying.

I shall have to finish winter spraying in a day or two without having used up all the material or completed the whole of the area intended, as the buds are getting too forward for the safe application of the carbolineum wash in use. Lime-sulphur could of course, be employed for some time yet, but carbolineum is much more drastic, and is not supposed to be used once the buds have begun to break. I believe that I might really continue for a while, as I have learned from experience that buds may be scorched on the outside with impunity. They have many coverings, and the outer ones do not seem to matter. However, it is just as well not to run unnecessary risks. This wash, even at seven-and-a-half per cent, strength, is caustic enough to scorch the grass beneath the trees. There will be ample opportunity to judge the effect of the wash, as some of the young trees sprayed were black with the eggs of the permanent Apple aphis, and there is a good sprinkling of Apple sucker eggs on some of the older trees.

The work of winter spraying has been seriously interrupted by rain and wind; and progress was slow even during fine periods owing to the muddy state of the ground. Attention will almost immediately be turned to the Plums, which are to be sprayed with nicotine and soft soap before the bloom opens, to kill the stem mothers of the leaf-curling aphis. The first of these was discovered on February 20. They do not seem to be at all plentiful: but it is wise to spray every season whether they can be found on the trees or not. There are always some, though they are very difficult to find; and they multiply at an amazing rate later. Spraying after the fall of the bloom, when the leaf-curling has begun, is practically useless. After the lesson of 1923, when fair Plum prospects were ruined by severe aphis attack, I shall never again run any risks with this pest. Carbolineum winter spraying would insure against serious trouble by killing the eggs, and will probably be done another year. For this season I decided to use my carbolineum on Apples, which are attacked in the bloom stage by more pests than are Plums.

Apple Leaf-Scorch.

Leaf-scorch has been an increasing trouble amongst Apples in the last few years, and was particularly bad in 1924. It is not a fungous disease, but is thought to be connected in some way with unhealthy root action. Research workers have not yet discovered the true cause, but information is gradually accumulating. At the Long Ashton Research Station it has been found that leaf-scorch may be associated with various conditions. In pot experiments with fertilisers it has been shown that depriving the trees of potash leads to a root system characterised by lack of fibrous roots and to severe leaf-scorch; and dressing with potash has proved to be a remedy in some plantations, though not in others. It has also been noticed that trees in grass very seldom show scorch in a severe form; and grassing down orchards has provided a cure in some cases. I am trying the potash treatment on trees of Beauty of Bath which were badly scorched last year, and shall resort to grassing down if this fails

The latest facts about leaf-scorch appear in a contribution from the East Malling Research Station, which is published in the *Journal of Pomology* for January. These facts have been collected in the course of the general work of the past six years. It has been found that the stock on which the trees are worked may have an important influence. Both the unworked stocks themselves and the trees grafted on them vary much in respect to liability to scorch. By far the worst stock for scorching is the so-called "Improved" Doucin, which is unfortunately rapidly displacing the ordinary Doucin in certain continental areas on account of the greater ease with which it can be propagated. The ordinary Doucin also scorches to some extent, but not enough to condemn this most useful semi-dwarfing stock. Very little scorch has been noticed on the true broad-leafed English Paradise, and little or none on the extremely dwarfing Jaune de Metz. Amongst the seedling "crab" or "free" stocks there is great variability in respect to liability to scorch, but on the average they show distinctly less tendency than the semi-dwarfing Paradise stocks.

There seems to be a direct relationship between blooming and fruiting, on the one hand, and leaf-scorch on the other. Trees scorch more in their "on" year than in their "off" year. In the plots used for pruning experiments at East Malling the trees annually leader-tipped and spurred scorch less than those treated more leniently; and there is evidence that this is merely because tipping and pruning have delayed fruiting. Lastly, these trees have always been generously manured, chiefly with organic nitrogenous materials. As this has not prevented scorch, it may be assumed that those growers who consider the trouble to be a sign of starvation, and seek to cure it by giving organic nitrogenous manures, are in error.

Top-Grafting.

I have very little to do in the way of top-grafting this season. This is a more hazardous business than it used to be, owing to the liability of top-grafted trees to be attacked by silver-leaf disease. Top-grafted Apples are quite commonly killed in this way, particularly where Newton Wonder is one of the varieties concerned. Failure through another cause is not unusual. The scions "take" all right, but die out after they have made a certain amount of growth. When this happens the bark on the cut-back branches of the stock is generally found to be dead or dying. It is evidently a matter of too severe an upset to the balance between branch and root system of the old tree. I have guarded against this trouble with a fair amount of success by leaving one branch of the old tree for one season, instead of heading down all of them. This takes some of the sap, and evidently acts as a kind of safety valve. A grower whom I recently visited has a still better plan which goes further in the same direction. He heads down only three or four branches for grafting the first year, leaving the rest as they are, and incidentally getting some crop from them. The next spring the remaining branches are either headed down for grafting or cut out altogether if the previous season's work appears likely to furnish the tree sufficiently with a new head. By this method, he contended, top-grafting could be done successfully with practically any variety.

Stored Apples.

What few Apples I stored for private use have not kept very well this year; and I am glad that I did not store any for sale. Bramley's Seedling and Newton Wonder were sold when gathered at nine shillings to ten shillings per bushel, and only in a few cases were exceptionally fine samples quoted any higher during February. Imported Apples are so plentiful nowadays that storing seldom pays if the labour and unavoidable waste be taken into account. *Market Grower.*

TOMATOS OUT OF DOORS.

The cultivation of Tomatos out-of-doors is a very uncertain business, the results depending on the kind of summer, but, excepting in the northern counties, the risk of total failure is in no case so great that there should be any hesitation in planting this crop out-of-doors.

Supplies cannot be obtained from plants against open walls and fences for a period exceeding eight or ten weeks, but generally the out-of-door cultivation of Tomatos will always prove profitable when properly carried out. In hot summers the supply of fruits will be abundant and the quality good, whilst in summers in which the rainfall is above, and the temperature below the average, out-door Tomatos will still afford a sufficient return to repay for the labour and attention bestowed on them.

To cultivate the Tomato with a complete measure of success in the open it is necessary to fully understand that it is a heat-loving subject, and that the English summers are short and frequently rather cool. If these facts are well considered it will be seen how important it is to have strong, well-grown plants to put out at the end of May or beginning of June so that they may be able to derive the fullest possible advantage from the heat of the summer, whether great or little.

If the seeds are sown too early the plants are apt to become starved in their pots before weather conditions enable the grower to put them in the open, and valuable time is lost because these plants take a long time to become established. Plants from seeds sown late, on the contrary, cannot become sufficiently strong to enable them to bear a satisfactory crop.

The seeds should be sown during the first half of March and the seedlings transferred singly to small pots so soon as they are large enough to handle. After they are well established in these pots they should be shifted into six-inch pots and grown on in a pit near to the roof-glass, with just sufficient warmth to maintain growth in a progressive state, and a free circulation of air. Very rich soil and a high temperature should be avoided, the aim being to promote stout and firm growth which may be easily hardened, so that no check will be experienced by the plants when preparing them for planting out-of-doors.

The most suitable position for Tomatos in the open is at the foot of a south wall, and the next best the south side of a close-boarded fence. They will, in most seasons, produce crops on east and west aspects, but not until the whole of the space on the south aspect has been filled should any planting be done on the other aspects. On very warm soils fairly good crops may be obtained in hot summers from plants in open quarters, but results are so uncertain that it is wise to plant only where some degree of protection can be obtained.

In all but light sandy soils it is almost as important to plant somewhat above the ground-level as it is to put out strong plants. By this method the rooting area becomes more exposed to the beneficial influence of the sun, and the plants make quicker growth, due to increased soil temperature. There is also no danger of the plants being injured by an excess of moisture at the roots, as, however heavy the rainfall may be, the water will quickly drain away. Where the soil is naturally cold and heavy it is desirable to add a liberal quantity of light, sandy soil, such as the refuse from the potting bench or, failing that, well-rotted vegetable manure and river sand.

When planted, Tomatos require very little attention beyond tying and pinching out the side shoots, which should, however, be done regularly. So soon as growth becomes active all side-shoots should be closely pinched to throw all the energy of the plant into the central stem and the formation of flower trusses. It is the practice of some growers to pinch the leader beyond the first cluster of flowers, leaving the next shoot to break away and grow on till another cluster of flowers develops, when the leading shoot is stopped again, and so on through the whole growth of the plant. A plant that is grown-on unstopped, however, will bear as much fruit as one that is pinched. All that is gained by pinching is the restricting of the growth to a smaller space; hence, if a wall or fence on which the plants are trained is a very low one this pinching may be useful. So soon as the fruits approach maturity they should be as fully exposed to the light as possible, but intensive defoliation should not be practised or the fruit will suffer both in size and flavour; it is far better to fasten large leaves on one side and allow them to perform their function of food elaboration in the plant.

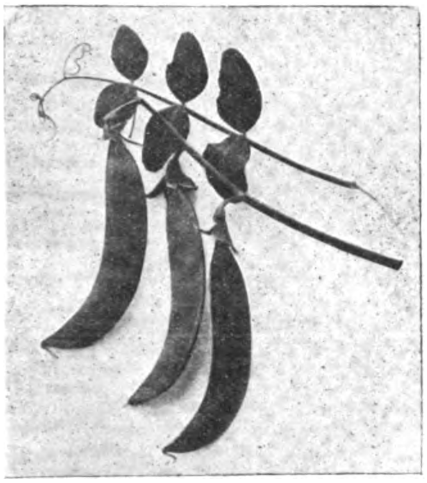

FIG. 73.—SMALL THREE-PODDED PEA.

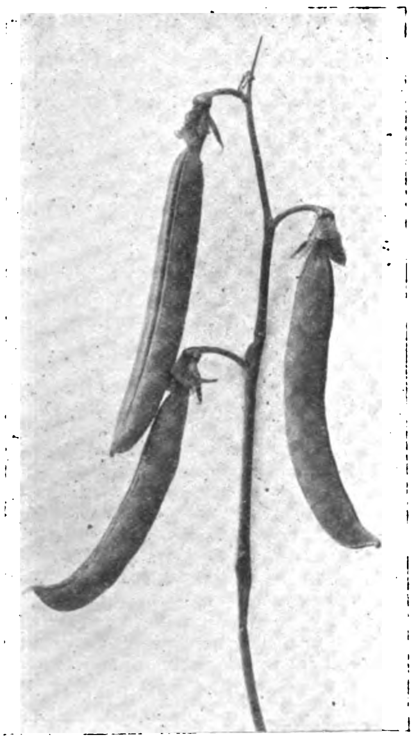

FIG. 74.—HYBRID THREE-PODDED PEA.

When it is seen that the summer is ending, and that the crop developed is sufficient, the leaves may be shortened, allowing, say half of each leaf to remain. By doing this the sun will reach the fruits and, together with the extra circulation of air about them, cause them to ripen before the weather gets very cold and sunless.

At about the end of August the plants may be stopped finally and all side-shoots kept closely pinched to help them in developing and maturing those fruits already formed. Assist the plants further by removing all fruits so soon as they turn colour, and at the end of the season all that part of the plant bearing green fruits may be cut and hung up in a warm house where the fruits will ripen and maintain supplies for several weeks. *W. Auton.*

A FOUR-PODDED PEA.

Much has been heard of the success achieved by Sweet Pea breeders in increasing the number of flowers on a stem, but little is known of similar efforts in connection with the culinary Pea. The flower of the latter is, of course, of little importance unless it is followed by a full pod, and not every flower is destined to accomplish this.

Types like Ne Plus Ultra and American Wonder produce a large percentage of peduncles with two flowers, both of which are generally followed by full pods; others, such as Gladstone, though they carry a large number of two-flowered peduncles, yet often "set" only one of these flowers. Others, again, bear flower stems with only one bloom and one abortive pedicel (*e.g.*, some stocks of Gradus).

It is, of course, well-known that "single" and "double" poddedness is very much affected by different factors, such as climatic and cultural conditions, or wide and close planting, nevertheless the types referred to maintain to a great extent the flowering and podding characteristics of their class in normal circumstances.

It is obvious that, other things being equal, a variety carrying two pods on each stem is a far more profitable one to grow than a single-podded kind, and it is the aim of the plant-breeder to encourage this characteristic to the utmost.

There is in existence a Continental strain (Fig. 73) which under favourable conditions will produce three flowers on a stem, followed frequently by three pods, though often one or more are abortive. The pods and "Peas" are, however, very small, indeed, too small for commercial use in this country. The strain, however, seemed something to work upon, and we endeavoured by cross-fertilisation to transfer the three-flowering habit to some of the more modern strains. Fig. 74 shows that this object has been achieved, but so far we have only been able to fix this character to a modified extent.

While still occupied with the early stages of this experiment we discovered in a field of Oats, in France, another three-podded strain (Fig. 75), but this had coloured flowers, with small seeds like those of the Maple Pea, and was so small as to be almost Vetch-like, in fact it was little, if at all, removed from the wild form. However, it occurred to us that we might cross it with some of the three-podded seedlings, which we did. To our surprise, from one of these crosses was produced the Pea which is the subject of these notes—a strain with four flowers and frequently with four pods on a penduncle (Fig. 76). This seedling has white flowers and seeds, but the pods and seeds are much too small to be of any commercial value. We think it, however, of sufficient general interest to place on record, and we are still hopeful it may lead to definite results of value. *E. P. F. Sutton, Reading.*

HOME CORRESPONDENCE.

Hepaticas.—In your issue of February 21, Sir Herbert Maxwell stated that for forty years he had failed to succeed in growing Hepaticas, so I give my experience. Last autumn, here in Wirrall, I planted a border of Hepatica triloba, and, despite the wet weather we have experienced, the plants have grown extremely well, and are now in full bloom. I planted them in ordinary garden soil—with a good addition of grit and gravel—on the east side of my garage. The Hepaticas have received no particular attention, but I fancy their success is due to grit in the soil. Robinson recommends a warm loam and a half-shady position. *H. L. R.*

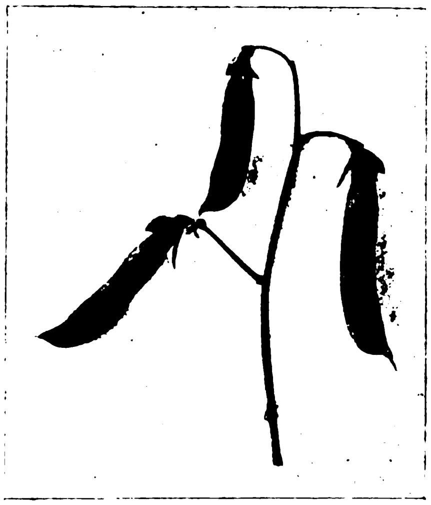

FIG. 75.—WILD THREE-PODDED PEA.

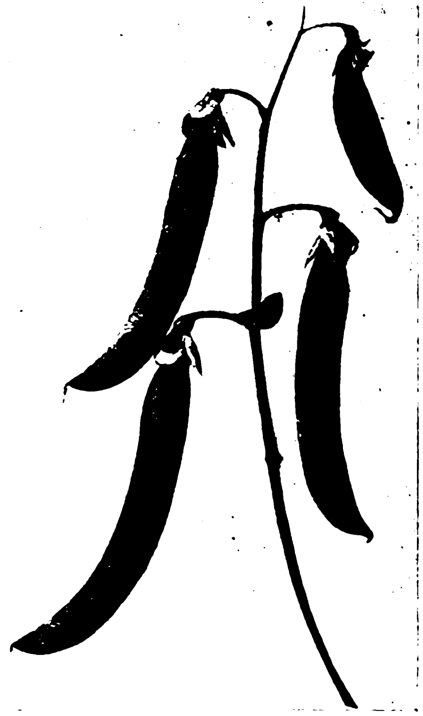

FIG. 76.—A FOUR-PODDED PEA.

Daphne Laureola.—I venture to suggest in regard to the notes on this species on pages 68, 135, 153, and 145, that both Daphne Laureola (p. 145) and D. pontica (p. 73) are sweetly scented as given in Weather's *Guide*, but the scent is somewhat fugitive, especially in the middle of the day, and some people's olfactory nerves are not so sensitive as others. This is especially the case after influenza. Therefore a person getting to the windward of a bush, that is rather "going off," in the middle of the day, may genuinely believe that it has no odour, whereas a fortnight before someone passing the same bush in the early morning or late evening, and having it to the windward would notice its fragrance. Our rural postman, delivering letters at seven a.m. and six p.m., once asked me what the lovely scent in the drive was, as no flowers were out. Gathered blooms probably soon lose their scent—mine (as sent to the Editor) were gathered in the morning and put in water to enable them to withstand the journey; they were posted in the evening, and were still fragrant when opened at *The Gardeners' Chronicle* office the next morning, but by the time they had been inspected there, re-packed and sent to Kew and unpacked there it is possible that the scent may have departed. With regard to D. Laureola as a bush, if planted fairly in the open it feathers all round, and the fact of the branches being bare except at the tip is not noticeable; but when grown in the shade and close to other shrubs it looks very "leggy." *K. M. Hinchliff, Instow, N. Devon.*

Vines from Eyes.—In reply to your correspondent *C.* (page 153, February 28), concerning vine propagation from "eyes," the eyes are inserted in small squares of turf. The soil is removed from the centre and the hollow filled with silver sand, in which the eye is placed; the turves are then placed on a hotbed in the Melon house, under handlights, and sprayed every morning. The tops of the lights are removed for one hour every morning. The roots push out quickly, before the bud bursts into growth. Six dozen eyes were treated thus this season and every one rooted and all are growing well. The varieties are Muscat of Alexandria, Madresfield Court, and Alicante. With reference to "ripened wood," I always select firm wood of a nut-brown colour, and from shoots that have not carried a bunch, with the buds not too prominent. I have found no difference between basal buds and the following ones, either in starting into growth or in the production of canes. This system I adopted on the advice of the late Mr. James Wilkins, of Messrs. J. Veitch and Sons, Chelsea, still remembered by a good many gardeners as one of the finest vine propagators of his day. *F. Streeter.*

Onions Cranston's Excelsior and Ailsa Craig.—In reply to Mr. George M. Taylor's remarks concerning my note *re* Cranston's Excelsior Onion, I may state that when Excelsior was sent out I seeded one of the best, globular bulbs, thinking I had something different from the type. The resulting seeds were sown in heat and the seedlings planted out in specially prepared ground, but to my surprise I had more Onions of the Excelsior type than I had of the rounder seed parent. The following year I seeded one of the best bulbs of Excelsior shape and the ultimate result was practically the same. Those trials of my own were sufficient to convince me that Excelsior produced both types, so I did not have to wait for the Wisley report about thirty years later to discover this fact. It is a matter of no moment to me whether Mr. Taylor considers my experiments conclusive evidence or not; he is welcome to rely on flower show schedules or seedsmen's catalogues. Mr. Taylor admits that in the Wisley Trials Messrs. Dickson and Robinson's Premier received an award as an Ailsa Craig type. I see the same sort of Onion exhibited at all the local cottagers' shows in this district, for prizes given by various seedsmen on the condition that seeds are purchased from them. In one exhibit the Onion is so-and-so's Supreme, in another, Nonsuch and so on, but they are all from the same stock, which was originally Cranston's Excelsior. *Grigor Roy, Halswell Park Gardens.*

SOCIETIES.

ROYAL HORTICULTURAL.

March 10.—There was a particularly fine exhibition on the occasion of the R.H.S. meeting on the above date and a very large number of Fellows and visitors took advantage of the sunny day to attend. Orchids were unusually good and occupied a very considerable proportion of the hall. In addition to these, there were several goodly displays of Daffodils and other early bulbous flowers, groups of alpines, flowering trees and shrubs and a few indoor plants, while, as is usual, there were several exhibits of Carnations.

Orchid Committee.

Present; C. J. Lucas, Esq. (in the chair), Gurney Wilson (Secretary), James O'Brien, J. Wilson Potter, W. J. Kaye, E. R. Ashton, T. Armstrong, Arthur Dye, S. W. Flory, W. H. Hatcher, Chas. H. Curtis, Henry H. Smith, H. G. Alexander, J. E. Shill, Fred. K. Sander, A. McBean, John C. Cowan, Stuart H. Low, Frederick J. Hanbury, H. T. Pitt and C. Cookson.

First-Class Certificates.

Cymbidium Flamingo var. roseum (Merlin × Alexanderi). From Lt.-Col. Sir Geo. L. Holford, K.C.V.O., C.I.E., Westonbirt, Tetbury (gr. Mr. H. G. Alexander). A noble variety with large and finely-formed flowers of a bright blush rose tint, the broad white labellums having a ruby-crimson band in front and some small ruby spotting.

Miltonia Beau Brummel, Pitt's variety (Venus × Bleuana Reine Elisabeth).—From H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood). One of the showiest of Miltonias in which the characters of the handsome form of M. Bleuana used show to advantage. The sepals and petals are dark Tyrian-purple with white tips, the broad lip rose colour with rayed purple lines on a white ground at the base.

Awards of Merit.

Cymbidium Bullfinch var. Brilliant.—From Lt.-Col. Sir George Holford. A model flower of fine substance with yellowish ground tinged and lined with purplish-rose; the lip is white with a claret band in front.

Cymbidium Miranda, Westonbirt variety (Alexanderi × Lowio-grandiflorum).—From Lt.-Col. Sir Geo. Holford. The plant bore a noble spike of twenty-two large flowers with greenish-gold sepals and petals and a broad white lip with a purple band.

Cymbidium Alexanderi, Overlea variety.—From Messrs. J. and A. McBean, Cooksbridge. A well-marked and fine form of this Cymbidium. The plant had a spike of nine large blush white flowers that have a purple-dotted band on the front and side lobes of the lip.

Cymbidium Tityus (Woodhamsianum × Alexanderi).—From Messrs. Armstrong and Brown, Orchidhurst Tunbridge Wells. A grand flower with cream-white sepals and petals delicately shaded with rose, and a broad, white lip finely marked with ruby-crimson.

Cattleya Jupetus (Tityus × Edith)—From Messrs. J. and A. McBean. A large flower of the Tityus class, with bright mauve sepals and petals and crimson-purple front to the broad, crimped lip.

Laelio-Cattleya H. T. Pitt var. superba (C. Enid × L-C. Bella). From Messrs. Flory and Black, Slough. A grand form of this very beautiful hybrid with large, rosy-mauve sepals and petals and a ruby-crimson lip with a yellow disc.

Preliminary Commendation.

Odontoglossum Mirimar (Ida × Mars)—From Messrs. J. and A. McBean, Cooksbridge. A perfect flower of deep purple colour with white tips to the segments.

Groups.

Lt.-Col. Sir Geo. L. Holford, K.C.V.O (gr. Mr. H. G. Alexander) was awarded a Silver-gilt Banksian Medal for a fine group of Cymbidiums raised at Westonbirt: the plants were profusely flowered and of the usual high quality associated with Westonbirt. Cymbidium President Wilson magnificum which had been previously exhibited is a very finely coloured and distinct form. In addition to those which secured awards there were a pretty variety of the unique C. Goosander, which secured a First-Class Certificate at the previous meeting; grand forms of C. Alexanderi, Westonbirt type, which, as a hybrid and a parent, ranks as probably the best; varieties of C. Cygnet, C. Merlin, C. Flamingo, C. Redstart and its hybrid C. Redshank and others.

Messrs. J. and A. McBean, Cooksbridge, were awarded the Gold Medal for a grand group of great extent and excellent arrangement, which comprised not only a fine selection of Cymbidiums but a rich assortment of most of the hybrids of the season. Odontoglossums, Odontiodas, Cattleyas and Laelio-Cattleyas. White Cattleyas were conspicuous, and among the Odontoglossums were O. Miguelito var. Conquest, a variety of rich colour, and O. Dictune, a grand flower brightly blotched with mauve-purple. Fine forms of many of the better known Cooksbridge hybrids were also shown well, every plant being a perfect example of what a well-grown Orchid should be.

Messrs. Charlesworth and Co., Hayward Heath, were awarded a Silver-gilt Banksian Medal for an excellent group in which their new types of hybrid Miltonias, Miltoniodas and Odontonias were attractive features and promising forerunners of still greater things to come. Among the Odontoglossums, O. Wilckeanum, Fowler's variety, is one of the cherished forms of the late J. Gurney Fowler, the best Wilckeanum of its class and likely to produce grand results by crossing. Of the Miltonias, which were many and varied, M. Princess Mary (Hyeana × Bleuana) is a fine novelty whilst others with the features of M. Reine Elisabeth leave little to be desired in their class.

Messrs Sander, St. Albans, secured a Silver-gilt Banksian Medal for an extensive group in which were many superb Cymbidiums, their latest novelty being C. Phyllis (Alexanderi × J. Davis Cooperi) a fine, green tinted flower with delicate rose tinge and white lip with ruby-crimson band. C. Alexanderi, Sander's variety is a worthy representative of this favourite hybrid; C. Louis Sander was also shown well, and the collection included a fine selection of Cattleyas, Lælio-Cattleyas and Odontoglossums with a number of interesting and rare species. A fine plant of Coelogyne cristata alba was staged in the front of the group.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), was awarded a Silver Banksian Medal for a group rich in fine hybrids and rare species, the Masdevallias among the latter being specially interesting. Odontoglossum St. James with its large, rich purple flowers with pure white broad margin is one of the best Odontoglossums shown this year. A selection of his Epidendrum Endresio-Wallisii, other species of Epidendrum and varieties of Lycaste and Maxillaria were also noted.

Col. Stephenson R. Clarke, C. B. (Orchid grower, Mr. J. W. Wilson) was awarded a Silver Banksian Medal for an interesting and pretty group of Dendrobiums in which varieties of D. nobile included the white form; some pretty yellow hybrids of D. signatum and the very fine D. Thwaitesiæ, Veitch's variety; D. Lady Colman was one of the best in form and colour and the several forms of D. Ainsworthii, D. Euryalus, D. Cybele and others of the class were good and varied.

Messrs. Cowan and Co., Southgate, secured a Silver Banksian Medal for an effective exhibit of good Cymbidiums among which their C. Lowio-grandiflorum concolor was very distinct. Two fine plants of Brasso-Cattleya British Queen were in the front of the exhibit, which included Laelio-Cattleya Jan (C. Octave Doin × L.-C. flamea), a showy flower; the white Cattleya Freda Sander and other white forms arranged effectively with the darker forms; a grand example of Odontioda Hanmerae and various Miltonias.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, staged an effective group for which a Silver Banksian Medal was awarded. Cymbidium Lowgrinum was noticeable in this group, and a selection of Dendrobiums included the rare species D. atroviolaceum. The best of the several showy Odontiodas was Oda. Laura, a large and richly-coloured flower. Many showy Odontoglossums with interesting botanical species were also included in the display.

Other Exhibits.

Messrs. Armstrong and Brown, Tunbridge Wells, showed, in addition to the new Cymbidium Tityus, a plant of their grand form of C. Gottianum with three superb blush-white flowers.

Messrs. Flory and Black, Slough, showed a fine white Odontoglossum crispum and Laelio-Cattleya H. T. Pitt variety superba, the last a grand flower.

Floral Committee.

Section A.—*Present:* Messrs. H. B. May (in the chair), J. M. Bridgeford, Hugh Dickson, D. Ingamells, M. C. Allwood, J. B. Riding, F. Streeter, G. W. Leak, D. B. Crane, W. P. Thomson, Chas. E. Pearson, Andrew Ireland, H. J. Jones, Donald Allan, W. Howe, E. R. Janes, and W. D. Cartwright (Secretary).

Section B.—*Present:* Mr. C. T. Musgrave (in the chair), Sir W. Lawrence, and Messrs. G. W. Loder, Jas. Hudson, G. Reuthe, W. B. Cranfield, F. G. Preston, A. Bedford, E. A. Bowles, R. C. Notcutt, W. J. Bean, T. Hay, E. H. Wilding, C. Williams, G. Yeld, Reginald Cory, Clarence Elliott, G. Harrow, and R. W. Trotter.

First-Class Certificate.

Freesia Wistaria.—A beautiful, large-flowered variety of clear Wistaria-blue colouring, but with white or very pale blue shading in the throat and a little yellow at the base of the long tube. This is a strong growing variety, and its distinct shade of colour is certain to make it extremely popular, especially with ladies. It received an Award of Merit on March 14, 1922. Shown by Mr. G. H. Dalrymple, Bartley, Southampton.

Awards of Merit.

Rhododendron Leonardslee Gem of the Woods.—In this variety the flowers are of medium size and pure white. They are broadly campanulate and carried in twos or threes at the ends of the branchlets. The lanceolate leaves are deep green above and paler beneath. They are also hairy on the upper surface and along the margins. Shown by Lady Loder, Leonardslee, Horsham.

Salix gracilistyla.—One of the comparatively new Japanese Willows and one that is found also in Manchuria. It was introduced about 1895. The species is interesting and effective, especially when the stout growths carry an abundance of silvery-grey catkins; when the stamens protrude from the latter and the yellow pollen is exhibited, they are peculiarly attractive. Later in the year the species carries an abundance of oval leaves which are somewhat abruptly tapered at each end. These may be from two to four inches long and from half-an-inch to so much as one-and-a-quarter-inch wide. They are grey-green above, somewhat glaucous, and silky beneath. The species was named by Miquel, and according to Mr. Bean its synonym is S. mutabilis, Hort. Shown by the Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree, Herts.

Groups.

Messrs. J. Carter and Co. are to be congratulated on their extensive group of Hyacinths in pots which was tastefully arranged on a floor space just inside the entrance. A large number of the best varieties was represented and these all were characterised by large and shapely spikes, while the disposition of the colours was especially successful. Mauve Queen and the darker Lord Derby, Dr. Lieber, Roi des Belges, bright red, City of Haarlem, yellow, and Duchess of Westminster are the names of only a few of the varieties so well grown and shown (Gold Medal).

The Caledonian strain of Cyclamen persicum which we have admired on previous occasions, was the subject of a very extensive display by Mr. J. W. Forsyth. On the present occasion the mammoth white variety was deservedly given prominence. The crested sorts were also important and many distinct colours were shown. The strain is evidently very floriferous as well as productive of exceptionally large blooms (Gold Medal).

Freesia Wistaria which received the high award of a First-Class Certificate was extensively shown by Mr. G. H. Dalrymple. The name is very appropriate as the colour of the flowers suggests the blue, though perhaps a little intensified, of Wistaria sinensis (Silver Banksian Medal).

The comparatively new Rose Princess Mary was well shown by Mr. Elisha J. Hicks, who also staged Rosa Moyesii, R. Hugonis, Climbing Lady Hillingdon, and Climbing Mrs. H. Stevens (Silver Banksian Medal). Mr. George Prince had splendid blooms of Richmond and the pink Columbia as well as Madame Butterfly, Coral Cluster and Austrian Briars (Bronze Banksian Medal).

Carnations continue to be shown in fresh and bright colours and Messrs. Allwood, Bros., added charming little vases of their Dianthus Allwoodii (Silver Banksian Medal). Mr. C. Engelmann again showed a number of varieties which are grown extensively for market (Bronze Banksian Medal).

Messrs. Stuart Low and Co. included vases of Sir Philip Sassoon and Lady Hindlip in their collection of Carnations and also groups of Anthurium Scherzerianum varieties possessing very large spathes, Hippeastrums, Acacias, Camellias and other greenhouse plants (Silver Banksian Medal).

Particularly good forced shrubs were contributed by Messrs. L. R. Russell, Ltd., who included several valuable greenhouse Rhododendrons, particularly R. Countess of Haddington and R. Veitchianum laevigatum. They also had very floriferous Wistarias, Pyruses, Azalea mollis and Clematis (Silver Banksian Medal).

Various Rhododendrons, both in flower and as dormant shrubs, were staged by Mr. G. Reuthe, who also showed alpine plants (Silver-Gilt Banksian Medal). A vivid mass of Rhododendron Cornubia, R. argenteum, R. ciliicalyx and many blooms of St. Brigid Anemones were displayed by Messrs. R. Gill and Son (Silver Banksian Medal).

Tulipa praestans, Narcissus triandrus, Iris orchioides and I. Bucharica, with various alpines, were arranged in an attractive low rockery by Messrs. Waterer, Sons and Crisp (Silver Banksian Medal). A well-designed rockery was also built and planted appropriately by Mr. F. G. Wood and in one bay he grouped many Saxifrages, Blue Primroses, and other lowly-growing plants (Bronze Banksian Medal).

A rockery of pleasing design was made by Messrs. Carter Page and Co. and this provided most suitable places for generous batches of Hepatica triloba Saxifraga Irvingii, S. apiculata varieties, Muscari, Cyclamen Coum and other appropriate plants (Silver Banksian Medal). Saxifrages were also used by Messrs. Skelton and Kirby in their next rockery which also contained the graceful Narcissus minimus (Brenze Banksian Medal).

A considerable variety of Saxifrages was displayed by Messrs. R. Tucker and Sons, and chief amongst them were S. Sundermannii (of Kew), S. burseriana sulphurea, and other varieties. There were also nice batches of Hepaticas of good colour and Pinguicula alpina (Silver Banksian Medal). Mr. G. A. Miller set up an enviable variety of Polyanthuses and Primroses, Daffodils, and a delightful batch of Tulipa Clusiana (Bronze Banksian Medal).

Andromeda floribunda, Dicentra (Dielytra) spectabilis, Saxifraga oppositifolia major, S. Gem, and some splendid plants of S. His Majesty were contributed by Messrs. M. Prichard and Sons (Silver Banksian Medal). The Misses Hopkins displayed Blue Primroses and other seasonable flowers (Bronze Banksian Medal).

Many fascinating spring flowers were attractively arranged by Messrs. Barr and Sons. Amongst a number of Crocuses, Kathleen Parlow, a large, pure white bloom, was prominent by reason of its excellence. Crown Imperials, Anemone blanda, and other sorts and Iris Burgundy are the names of other attractive plants (Bronze Banksian Medal).

A rockery of satisfying design and associated with many valuable flowering and foliage shrubs was exhibited by Messrs. Wm. Cutbush and Son. Japanese Maples, Pyruses, Azaleas, and Rhododendrons were very conspicuous. (Silver Banksian Medal). Messrs. Bakers, Ltd., showed seasonable plants. Mr. H. Hemsley set up several large clumps of Erica carnea with other shrubs and alpines. (Bronze Banksian Medal).

Violets were well shown by the Misses Allen-Brown (Bronze Banksian Medal) and Mr. B. Pinney; the forms included several varieties with pink or pinkish flowers, and these attracted some attention.

A magnificent table of Iris Wedgwood was arranged by Messrs. Lowe and Shawyer. This valuable Iris received an Award of Merit when shown by Messrs. Lowe Shawyer and Van Waveren on January 27 It is supposed to be the result of crossing Iris tingitana with I. Xiphium. Considerable quantities have been on sale in Covent Garden Market since quite early in the year when the colour was what may be termed silvery-blue, while on the present occasion, no doubt on account of longer days and a stronger light, they are of a richer blue, though in each instance it is a most charming flower. An illustration which appeared in *The Gardeners' Chronicle* of February 7 last gives a good idea of the graceful form of the flower, but can convey no impression of the charm of colouring. (Silver Banksian Medal.)

Primroses in pots were shown by B. H. Bunton, Esq., Byfleet, illustrating with the living, flowering plants, the genetics of coloured Primroses, especially in regard to the varying shades of blue and red colour.

Messrs. Reamsbottom and Co. again displayed excellent blooms of their strain of St. Brigid Anemones.

Narcissus and Tulip Committee.

Present: Messrs. E. A. Bowles (in the Chair), F. Herbert Chapman, J. Duncan Pearson, J. de Graaff, E. C. Titchmarsh, J. S. Arkwright, P. R. Barr, W. Poupart, G. W. Leak, J. W. Jones, Alfred W. White, Geo. Monro, W. B. Cranfield, C. H. Curtis, and the Rev. Joseph Jacobs and R. W. Ashcroft Secretary).

Awards of Merit.

Medusa.—This sweetly-scented variety belongs to the Tazetta Section (Division 8), and promises to be an extremely useful one. The flowers are of medium size, pure white with a fiery-scarlet, flattish cup. In many instances the stems bear two flowers, consequently the variety promises to be useful for garden decoration as well as for other purposes. On this occasion it gained the award as a market flower and also as a variety suitable for the garden. Shown by P. D. Williams, Esq., Lanarth, St. Keverne, Cornwall.

Godolphin.—A handsome, soft golden yellow and entirely self-coloured Trumpet variety (Division 1a). The bold flowers are shapely, the perianth segments broad with the inner three slightly twisted, while the finely formed Trumpet is neatly frilled at the mouth. We understand that Godolphin opens its flowers nearly a week before King Alfred when grown under similar conditions. The award was granted to it both as a market flower and for garden decoration. Shown by P. D. Williams, Esq.

Groups.

A very attractive collection arranged by Messrs. Barr and Sons contained a goodly number of excellent seedlings. These were chiefly of the large Trumpet type, but others were equally well represented. Of the named varieties the large Trumpets again attracted most attention. Orange Glory is a well-formed flower of very rich colouring. Le Bean is similar in colour but possesses an exceptionally long tube. Warwick belongs to the large Trumpets, which have very widely opened tubes. The drooping flowers of Alice Knights were chastily beautiful. Besides the Trumpet varieties we have named above there were especially good blooms of Leedsii, Barri, and Tazetta varieties (Silver Banksian Medal).

Trumpet Daffodils with sulphur-yellow tubes were prominent in the fascinating group set up by Messrs. J. R. Pearson and Sons.. These included Capella, Vega, and Empire. Amongst the bicolors of especial note were Spring Glory and Lady de Bathe, while Mr. R. Sydenham, a pearly white Trumpet, was also of considerable merit. The brightly rimmed Barri types included Firebrand, Gipsy Queen, and Marshlight (Silver-Gilt Banksian Medal).

Mr. P. D. Williams showed showed some excellent vases of Narcissus Medusa and the large Trumpet Daffodil Godolphin.

Chief amongst the varieties shown by Messrs Cartwright and Goodwin were Victoria and Empress, bicolors, and Southern Gem, Homespun, and Sir Watkin (Bronze Banksian Medal).

The spring bulbs growing in ornamental bowls of fibre which Messrs. R. H. Bath, Ltd., tastefully arranged, were fully equal in merit to any of their former displays. Tulips La Neve and William Copland, Narcissus Emperor, and Sir Watkin, as well as Hyacinths, Anemone fulgens and Fritillaria Meleagris illustrated the value of fibre as a rooting medium for spring bulbs (Silver Banksian Medal).

Messrs. J. Carter and Co. had a small collection of particularly well-grown King Alfred Daffodils in pots.

Fruit and Vegetable Committee.

Present: Messrs. J. Cheal (in the chair), W. Poupart, P. C. M. Veitch, Geo. F. Tinley, A. C. Smith, S. B. Dicks, A. Bullock, A. Metcalfe, Ed. Beckett, F. Jordan, H. Prince, E. Neal, H. Markham, and W. H. Divers.

Mrs. Philip Martineau, Broom Hall, Sunningdale, exhibited three fruits of King Tangerine Orange, a very large variety of this type of Orange from Havana, Cuba. The quality of this large Tangerine Orange is very good.

Messrs. G. Bunyard and Co., Ltd., showed a select exhibit of Apples representing the most desirable sorts in season. The varieties included Reinette du Canada, Court Pendu Plat, Brownlee's Russet, Hormead's Pearmain, Gabalva, Ontario, Braddick's Nonpareil, Rosemary Russet, King's Acre Pippin, Adams's Pearmain, and Duke of Devon.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

There was a good attendance of members on the occasion of the Annual General Meeting of the United Horticultural Benefit and Provident Society held at the Royal Horticultural Hall on Monday, March 9. Following the usual initial formal proceedings a silent vote was taken in memory of the members who lost their lives in the great war. The report of the Committee for 1924 was then presented, from which we make the following extracts:—

> The members of a Society which has attained the mature age of sixty years, and undeniably proved its usefulness during that period, have every reason to rejoice on the occasion of its Diamond Jubilee. The Committee of the United Horticultural Benefit and Provident Society is proud of the high position the Society holds among provident societies, and is not unmindful of the services rendered ungrudgingly by those Officers and Members of Committee who managed the Society's affairs in the earlier, leaner and more difficult years of its existence. All honour is due to them, for on the foundation laid by Mr. Wm. Marshall and Mr. Shirley Hibbard they raised the substantial base of an enterprise their successors are proud of.
>
> Since its establishment in 1865 the Society has paid £4.363 5s. 3d. to members who have passed the age of three score years and ten; to the nominees of deceased members, £7,020 14s. 6d.; to lapsed members reaching the age of sixty years, £1.798 11s. 7d.; in payments to sick members, £16,452 8s. 4d.; and it has contributed £3.688 1s. 1d. to members in distressed circumstances. Thus, the total payments to members during sixty years come to the handsome sum of £33,323 0s. 9d. Notwithstanding all these disbursements, the Society has now invested funds totalling £68.776, and herein lies its security. During the sixty years of its life 3.016 gardeners have been admitted to membership.

During the year £3,600 has been invested and £987 11s. 2d. paid out in sick pay in addition to £241 4s. 0d. paid from the Distress Fund. References were made to the successful annual dinner held at the Imperial Hotel, under the presidency of Lionel de Rothschild, Esq., on November 5 last, and also to the death of Sir Harry J. Veitch, who was for many years the Society's patron and its warm and influential friend. We gather that the additional benefits resulting from the proposals made at the Special General Meeting in 1924 have been greatly appreciated by the members and these, together with the advertisements of the Society, have resulted in the addition of 92 new members during the past year.. Management expenditure came to £429 4s. 7d., while the Treasurer's statement showed a balance on the right side of £970 1s. 8d., and investments now come to the splendid total of £68,041 16s. 6d.

The Chairman, Mr. C. H. Curtis, moved the adoption of the report and accounts and the motion was seconded by Mr. Vasey, who confessed that although he had been a member for thirty years this was his first appearance at an annual meeting, but he hoped it would not be the last. The report and accounts were then adopted.

On the motion of Mr. Butler and Mr. Edwards, Mr. A. Bedford was heartlily thanked for his services for the past year. A vote of thanks was accorded to the Trustees—Messrs. J. Hudson, Riley Scott, and C. H. Curtis—on the proposal of Mr. Divers seconded by Mr. Prince. The retiring members of Committee were heartily thanked for past services and re-elected, on the motion of Mr. Young, seconded by Mr. Gee. Messrs. Gunner and Puzey were re-appointed auditors and a vote of thanks was passed to the horticultural press for kindnesses received, on the motion of Mr. Wesker, seconded by Mr. Bashford. The meeting agreed that a sum of £100 should be transferred from the surplus interest account to the management fund to enable the Committee to carry on its advertising campaign.

An interesting matter was then raised on the motion of Mr. Gaskell, seconded by Mr. Price, to the effect that, as the Society was celebrating its Diamond Jubilee, some little token of appreciation should be given to each officer of the Society and every member of Committee. It was suggested that this little souvenir should take the form of a small and suitably engraved medal or pendant that could be hung on a watch chain. The Chairman pointed out that this was a matter in which the Committee could not very well vote or take part and he suggested that the proposal should include a limit of expenditure. The suggestion was accepted and a sum of £25 was fixed as the limit. The motion was then placed before the meeting and supported by several members and eventually carried unanimously. Mr. Craik then moved the confirmation of the minutes of June 2, 1924, to enable the Committee to adjust the amounts allotted for the relief of members in connection with dental, optical, surgical and other matters, so that a larger proportion of relief (up to seventy-five per cent.) might be allowed in the cases of dental and optical treatment. This motion, which effected only the State members, was seconded by Mr. Young and carried unanimously. On the motion of Mr. Cresswell, seconded by Mr. Bartlett, the Chairman was heartily thanked for his conduct of the meeting and for his services as chairman of the Committee during the past year. Subsequently Mr.Curtis was re-elected chairman and Mr. Butler vice-chairman.

Obituary.

Mrs. H. W. Ward.—We regret to learn that Mrs. Ward, widow of the late Mr. H. W. Ward, for many years gardener at Longford Castle and subsequently in business as a nurseryman, at Lime House, Rayleigh, Essex, died at her home at Rayleigh on the 3rd inst., aged 87 years.

ANSWERS TO CORRESPONDENTS.

Names of Plants: *K. W.* The small-leaved shrub is Lonicera nitida and the other, L. Standishii. *G. L. W.* 2, Cupressus Lawsoniana; 3, Cornus Mas. *G. W.* Eupatorium Weinmannianum (syn. E. odoratum).

Magnolia pumila and M. Coco: *E. W. W.* Magnolia pumila (syn. Talauma pumila) is a native of Amboyna and Java and should succeed under cultivation if grown in an intermediate temperature. The white flowers are sweetly scented and produced, more or less, all the year round. We are doubtful whether it is in cultivation in this country, except in one or two botanic gardens. The species is figured in the *Botanical Magazine*, t. 977 (1806), but there is little information concerning it in the text accompanying the illustration, although an observation of interest is "we have been informed that some Botanists in Madras, considering this plant as a new genus, named it Gwillimia in honour of Lady Gwillim, the patroness of the science in that Presidency." Magnolia Coco appears to be De Candolle's name for the same plant; M. pumila is Blume's name, and Talauma pumila is credited to Andrews. Bailey, in his *Standard Cyclopaedia of Horticulture*, uses the first of these three names and regards the other two as synonyms.

Planting Roses: *S. W.* You do not state what is the nature of the soil in which you have planted your Roses, whether heavy or light; if the texture of the ground is light, cow manure placed well below the roots would prove of great advantage to the plants in dry weather. As you made the roots very firm the Roses should succeed, and the materials you have incorporated with the ground should be helpful to them, but bone-meal would have been better than basic slag. There will be no necessity to protect the plants from frost. If the weather proves very dry in the late spring, when the plants are commencing to grow freely, a mulching of short stable litter placed over the roots would serve to keep the latter moist.

Communications Received.—M. M.—A. G.—T. W.—E. H. K.—R. A.—C. P. R.—K. M. H.—F. J. R.—W. A.—F. E.—E. P., Cleveland—Reader, L. R. A.—G. R.

MARKETS.

COVENT GARDEN, Tuesday, March 10, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Azaleas, per doz.	15 0–36 0
Cacti, per tray,	
—12's, 15's	5 0– 7 0
Crotons, per doz.	30 0–45 0
Cyclamen—	
—32's	36 0–48 0
—48's	24 0–30 0

	s. d. s. d.
Cyrtomium	10 0–15 0
Erica melanthera, 48's per doz.	21 0–30 0
— —60's, per doz.	8 0–10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0– 4 0
Marguerites, white, 48's, per doz.	18 0–30 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 6

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun.	12 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays	1 6– 2 6
short ,,	0 9– 1 3
—Sprengeri, per bun.	
long sprays	1 6– 2 0
medium ,,	1 0– 1 6
short ,,	0 4– 1 0
Azalea, white, per doz. bun.	9 0–10 0
Bouvardia, white, per doz. bun	12 0–15 0
Camellias, White, per box	3 6– 4 0
Carnations, per doz. blooms	3 0– 5 0
Croton leaves, var., doz. leaves	0 9– 2 6
Daffodils—	
—Emperor, per doz. bun.	10 0–12 0
—Golden Spur, per doz. bun.	3 0– 5 0
—Henry Irving, per doz. bun.	3 0– 5 0
—King Alfred, per doz. bun.	10 0–12 0
—obvallaris, per doz. bun.	3 0– 5 0
—Sir Watkin, per doz. bun.	5 0– 12 0
Fern, French, per doz. bun.	0 9– 1 3
Freesia, per doz. bun., special	9 0–12 0
—White, per doz. bun.	2 6– 3 0
—Special, long, per doz. bun.	9 0–12 0
Galax, American, green and bronze, per doz. bun.	— 3 0
Iris tingitana, per doz. spikes	5 0– 6 0
Lilac, Dutch, per spikes	4 0– 8 0
Lilium lancifolium album, per doz. blooms	— —
—rubrum, long, per doz. blooms	4 0– 5 0
—short ,, ,,	3 0– 4 0
Lilium longiflorum long, per doz.	7 0– 8 0
short ,, ,,	— —
Lily of the Valley, per doz. bun.	24 0–36 0
Narcissus—	
—Scilly White, per doz. bun.	3 0– 5 0
Orchids, per doz.	
—Cattleyas	24 0–30 0
—Cypripediums	5 0– 7 0
Primroses, per doz. bun.	2 6– 4 0

	s. d s. d.
Prunus triloba (Dutch), per bun.	1 0– 1 6
Richardias (Arums) per doz.	9 0–10 0
Roses, new crop, per doz. blooms, Richmond	6 0– 9 0
Ruscus, French, per bun.	1 0– 2 0
Smilax, per doz. trails	2 0– 3 0
Sweet Peas, per doz. bun.	15 0–18 0
Tulips, per bunch—	
—Couronne d'Or	2 0– 2 6
—La Reine	1 6– 2 0
—Mons Tresor	2 0– 2 6
—Prince of Austria	1 9– 2 0
—Rosina	1 6– 2 0
—Thomas Moore	1 6– 1 9
—Wm. Copland	2 6– 2 9
Violets, per doz. bun	2 0– 4 0
French Flowers—	
Anemone, dble, pink, per doz.	3 6– 5 0
—De Caen, mixed, per doz.	9 0–10 0
—single blue, per doz.	3 0– 4 0
Carnations, per bun	1 6– 2 0
Freesia, long, per pad	14 0–15 0
Marguerite, yellow, per pad	8 0–10 0
Marigolds, per pad	7 0–10 0
Mimosa, per pad	8 0–12 0
—per bun.	1 0– 1 3
Narcissus—	
—Grand Primo, per doz. bun.	4 0– 6 0
—ornatus, per doz. bun.	7 0–10 0
—Soliel d'Or, per doz. bun.	4 0– 5 0
Ranunculus, double scarlet, doz bun.	8 0–10 0
—Carmine, per doz. bun	8 0–12 0
Roses, per pad	8 0–10 0
—Ulrich Brunner, per doz. blooms	6 0–10 0
Star (Allium), per pad, 48's	10 0–12 0
Stock, double white, per pad 24 bunches	8 0–10 0
—double coloured	7 0– 8 0
Violets, Parma, per bun.	3 0– 3 6
—single, per pad	6 0– 8 0
Wallflowers, per pad	5 0– 7 0

Remarks.—There is a plentiful supply of most of the home-grown flowers of a choice nature, but Daffodils and Tulips constitute the most important features. Carnations are moderately plentiful, but their quality is none too good, and there are a few more Roses coming to hand, but still not sufficient for the demand, and the best English Roses are making up to 12/- a dozen. The prices for Lilium longiflorum are easing: the blooms marketed are of good quality and fairly plentiful. This also applies to Richardias (Arum Lilies). Tulips are plentiful, the majority being from home growers, and their prices are holding well. Daffodils from home growers as well as the Channel Isles are plentiful and of numerous sorts. French flowers are getting very poor in quality and the majority of them will soon be over. Mimosa is now practically finished for the season and French Violets are of very poor quality. Home-growers are sending some excellent Violets, but their prices are dear, in view of the failure of the French ones. Snowdrops are almost finished. Lilac is both good and cheap and the market now has a good assortment of flowers for all purposes, yet blooms for foundation work in floral designs are maintaining their recent values.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Oregon Newtown	15 0–18 0
—Newton Wonder	6 0–10 0
—Bramley's Seedling—	10 0–15 0
—Californian Newtown	12 0–14 0
—Spitzenberg	14 0–18 0
—Stark	26 0–30 0
—Russett	25 0–35 0
—Baldwin	26 0–30 0
—Greening	30 0–35 0
Bananas, singles	16 0–25 0
—doubles	17 0–27 6
Grapes—	
—Gros Colmar	4 0– 6 0
—Belgian Colmar, per lb.	2 6– 3 6
Grapes, South African—	
—Hermitage	8 0–10 0
—Red	10 0–12 0
—White	12 0–15 0

	s. d. s. d.
Grape Fruit, Cuban	20 0–24 0
—Jamaica	20 0–24 0
—Florida	25 0–27 6
Lemons, Messina, per box	8 0–10 0
—Murcia	12 0–14 0
—Naples	15 0–25 0
Oranges, Jaffa	16 0–20 0
—Spanish—	
—300's	14 0–30 0
—360's	14 0–20 0
—504's	14 0–18 0
—Seville	20 0–25 0
—Malaga Sour	17 0–20 0
Pears, South African—	
—Beurré Hardy	4 0– 6 0
—Beurre Superfin	5 0– 7 0
—Louise Bonne of Jersey	4 0– 6 0
Pines	2 0– 4 6
South African Peaches	5 0–10 0
—Nectarines	5 0–10 0
—Plums, Kelsey	10 0–15 0
Tunis Dates, doz.	5 0– 6 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	2 6– 3 0
—Worthing	2 0– 2 6
—Madeira, per box	3 6– 6 0
Beets, per cwt.	4 6– 5 0
Cabbage, per tally	6 0– 7 6
Canary Island Tomatos	18 0–25 0
Cauliflowers, per doz.	3 0– 4 0
Forced Mint, per doz.	4 0–10 0
Celery, best, washed, per bundle	2 0– 3 0
—Second	0 9– 1 0
Chicory, per lb.	0 3–0 3½
Carrots, per bun.	— 0 10
—New	— —
Cucumbers, per doz.	9 0–16 0
Dutch Onions	11 6–13 0
Endive, per doz	1 6– 3 6
Batavia, per doz.	3 0– 3 6
English Asparagus—	
—Finest	7 6– 8 0
—Best	4 0– 5 0
French Asparagus—	
—Paris Green	7 0– 8 0
—Lauris	6 0–10 0
Greens, per bag	1 0– 2 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundles	2 6– 3 6

	s. d. s. d.
Lettuce, per dozen	1 9– 2 6
—Outdoor	2 6– 3 0
Mushrooms, cups	2 6– 3 6
—broilers	2 0– 2 6
Onions, Valencia, per case	16 0–18 0
—English, per cwt.	12 0–13 0
Parsnips, per cwt.	4 0– 6 0
Peas, French, per cane	8 0– 9 0
Potatos, Canary Island, per case	8 0–12 0
—Spring crop	15 0–18 0
Potatos, per ton—	
—Dunbar	220 0–240 0
—King Edward	190 0–210 0
—White	90 0–160 0
—New Guernsey lb.	0 8–0 10
Potatos, New—	
—Algerian, per lb.	0 2½–0 3
—Azores, per case	10 0–18 0
Radishes—	
—Guernsey round	1 6– 2 0
—Guernsey long	1 0– 1 6
—French	2 0– 3 0
Rhubarb, Forced per doz.	2 6– 3 0
—"Natural" per doz.	7 0– 8 0
Savoys, per tally	7 6–12 6
Seakale, per lb.	0 7– 0 9
Spinach, per bushel	5 0– 6 0
Sprouts, bag	4 0– 7 0
Sweet Potatos	3 0– 3 6
Turnips—	
—new, per bun	— 0 10

Remarks.—Brighter weather has been altogether favourable to the fruit trade, most departments reporting better business. A very large consignment of fruits from the Cape has been the main feature of the market. The bulk of the fruits consisted of Peaches, Nectarines, Plums, Grapes and Pears. A portion of the fruit unfortunately was over-ripe, Pears in particular being in poor condition. The Apple trade is firmer and both home-grown and imported Apples are quoted higher. Some very fine parcels of English Apples from cool chambers have been marketed and realised satisfactory prices. Hothouse Grapes, although feeling the competition with South African fruits are selling fairly well. The prices of forced Beans are slightly easier owing to increased supplies. Forced Asparagus is going out steadily in spite of the competition with French Asparagus. New Potatos from Guernsey are a good trade, but New Potatos from the Canary Islands, Algeria and the Azores are moving very slowly. Forced Rhubarb has receded sharply in quotation on more plentiful supplies of "natural" Rhubarb being available. Mushrooms are in short supply. Green vegetables have been inclined to be easier in price. Trade in old Potatos is steady with ample supplies on offer.

GLASGOW.

Business was good in the various departments of the market during the past week and except in a few instances prices ruled firm, particularly on Friday, when the highest levels were recorded. Supplies of fruit were well maintained. First consignments of Cape products met with a ready sale although the Pears were not in the best condition, the quality being rather mixed. Williams's Bon Chrétien made 4/- per box and Beurré Hardy 6/-, while Peaches averaged 6/- to 7/- and Grapes 12/- to 16/-. English Gros Colmar Grapes were steady at 3/9 to 5/- per lb. and Scotch-grown at 3/6 to 4/-. Oranges displayed an improved tendency, 300's, 360's and 240's averaging from 15/- to 20/-; 420's, 20/- to 32/-; Murcia, 20/- to 24/-; Jaffa and Sunkist, 15/- to 20/-; Seville Bitter, 16/- to 17/-; Palermo, 13/-; Lemons, 12/6 to 15/-; and Grape Fruit, 18/- to 25/-. There was a numerous selection of Apples in various brands and gradings. Newtown Pippin advanced to 50/- per barrel and prices of other well known sorts ranged as follows:—Nova Scotia Baldwin, 23/- to 24/-; Stark, 26/- to 32/-; Ben Davis, 22/- to 26/-; Canadian Greening, 30/- to 36/-; Baldwin, 28/- to 35/-; Oregon Winesap, 13/6 to 16/6 per case; Newtown, 15/- to 18/-; Spitzenberg, 13/6 to 16/-; Delicious, 16/6 to 17/6; Ortley, 13/6 to 15/-; and Rome Beauty, 12/6 to 15/6. Winter Nelis Pears made 28/- per case. Turban Dates sold for 5/3 per doz.; Figs, 7/6.

In the cut flower market, Tulips were in shorter supply and in order to meet their requirements buyers had to concede firm prices. Darwin Pink, No. 1 made 1/9 for 6's; Bartagon, 1/2 to 1/6; Prince of Austria, 9d. to 1/-; Couronne d'Or, 10d. to 1/3; Tea Rose, 9d. to 1/-; Pride of Haarlem, 1/6; Copland, 10d. to 1/2; Vuurbank, 10d. to 1/2; and Murillo, 8d. to 1/1. Daffodils from the open are now competing with blooms raised under glass. The former made 4/- to 8/- per doz. for Golden Spur and 4/- to 5/- for Sir Watkin, while forced flowers sold at 10/- to 13/- for specials of the first named and 10/- to 12/- for the latter. King Alfred averaged 1/- to 1/2 for 6's; Emperor, 1/1; and ornatus, 6d. to 8d. per doz. Richmond Roses were worth 4/- to 6/- per doz. for smalls and 6/- to 9/- for specials, while Sunburst ranged from 10/- to 13/-. Best Carnation blooms advanced to 5/- per doz. and ordinary blooms averaged from 2/- to 3/-. Lilac yielded 7/- to 8/- per doz. for white and 5/- to 6/- for purple; Prunus 2/6 to 4/6 per bunch; English Wallflower, 2/- to 3/- per doz. bunches; Snowdrops, 1/6 to 2/-; Anemones, special, 9/- to 10/-; ordinary, 4/- to 5/-; English Violets, 4d. to 6d.; special, 1/6; French Violets, 2/-; and Parma Violets, 2/- to 3/-; Lily-of-the-Valley, 1/6 to 2/6; Richardia (Arums), 8/- to 10/-; Lilium Harrisii, 9/- to 12/-; Asparagus, 1/6 to 2/6; and Smilax, 1/6 to 2/-. Hyacinths in bowls sold at 2/- each and Wallflower plants were cheap at 1/6 to 2/- per box.

The feature of the vegetable section was the advance to 56/- in the price of Rhubarb. Onions were easier, 5's being 15/-, 6's 13/-, 4's 11/- per case and 12/- per bag. Siboes averaged 6/- per doz. bunches; large Leeks, 7/-; Horse Radish, 1/6 per bunch; and Madeira Beans, 6/- to 7/- per box.

TRADE NOTE.

On Wednesday of last week, Messrs. Felton and Sons, Ltd., Hanover Square, W., entertained their emyloyees and their friends on the occasion of the annual staff ball. There was an attendance of one hundred and thirty persons, and a very enjoyable evening was spent. In addition to a full programme of dances there were novelty dances for which special prizes were awarded. After supper the guests were presented with favours, while a fleet of big balloons was let loose among the dancers, adding to the merriment of the occasion. During the evening those present were not unmindful of those less pleasantly situated than themselves, and they balloted for a large basket of fruit and flowers presented by Mr. R. F. Felton, with the result that a substantial donation was sent to the Gardeners' Royal Benevolent Institution.

SCHEDULES RECEIVED.

Northampton Municipal Horticultural Society.—Tenth exhibition to be held in Abington Park, on Wednesday and Thursday, August 5 and 6.—Secretary, Mr. H. Curtis, Abington Park, Northampton.

Royal Agricqltural Society of England.—Horticultural Exhibition to be held at Chester on July 7, 8, 9 and 10.—Secretary, Mr. Peter Blair, Trentham, Stoke-on-Trent.

British Carnation Society.—Exhibition to be held at the Royal Horticultural Hall, Westminster, on March 26.—Secretary, Mr. P. F. Bunyard, 57, Kidderminster Road, Croydon, S.E.

GARDENING APPOINTMENTS.

Mr. W. E. Eden, for the past four years gardener to the late Lord Ailwyn, Honingham Hall, Norwich, as gardener to Mrs. A. C. Birkin, Tacolneston Hall, Norwich.

Mr. G. W, Grass, for the past six years gardener to the Brockhall Institution, Whalley, Lancashire, as gardener to Lady Jane Furness, Grantley Hall, Ripon, Yorkshire. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.).

Mr. Ernest Geo. Hales, previously gardener to J. H. Barnard, Esq., Stone House, Reigate, Surrey, as gardener to E. L. Tomlin, Esq. J.P., Angley Park, Cranbrook, Kent.

Mr. J. Kitt, for the past year and seven months gardener to the Lady Mac Robert, at Colney Park, St. Albans, as gardener to Sir W. Mount, Bt., at Wasing Place, near Reading, in succession to his father, who served for forty years at Wasing Place. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.).

Mr. W. Sage, for the past three years gardener to The Lady Blythswood, Penrice Castle, Swansea, as gardener and Park Keeper to the Minehead Urban District Council.

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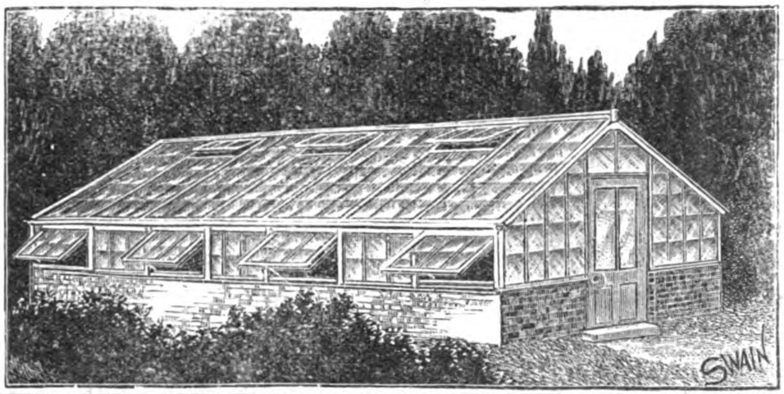

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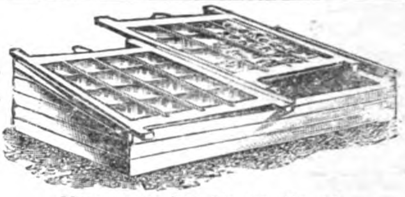

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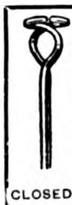

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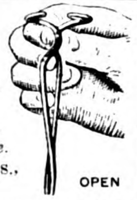

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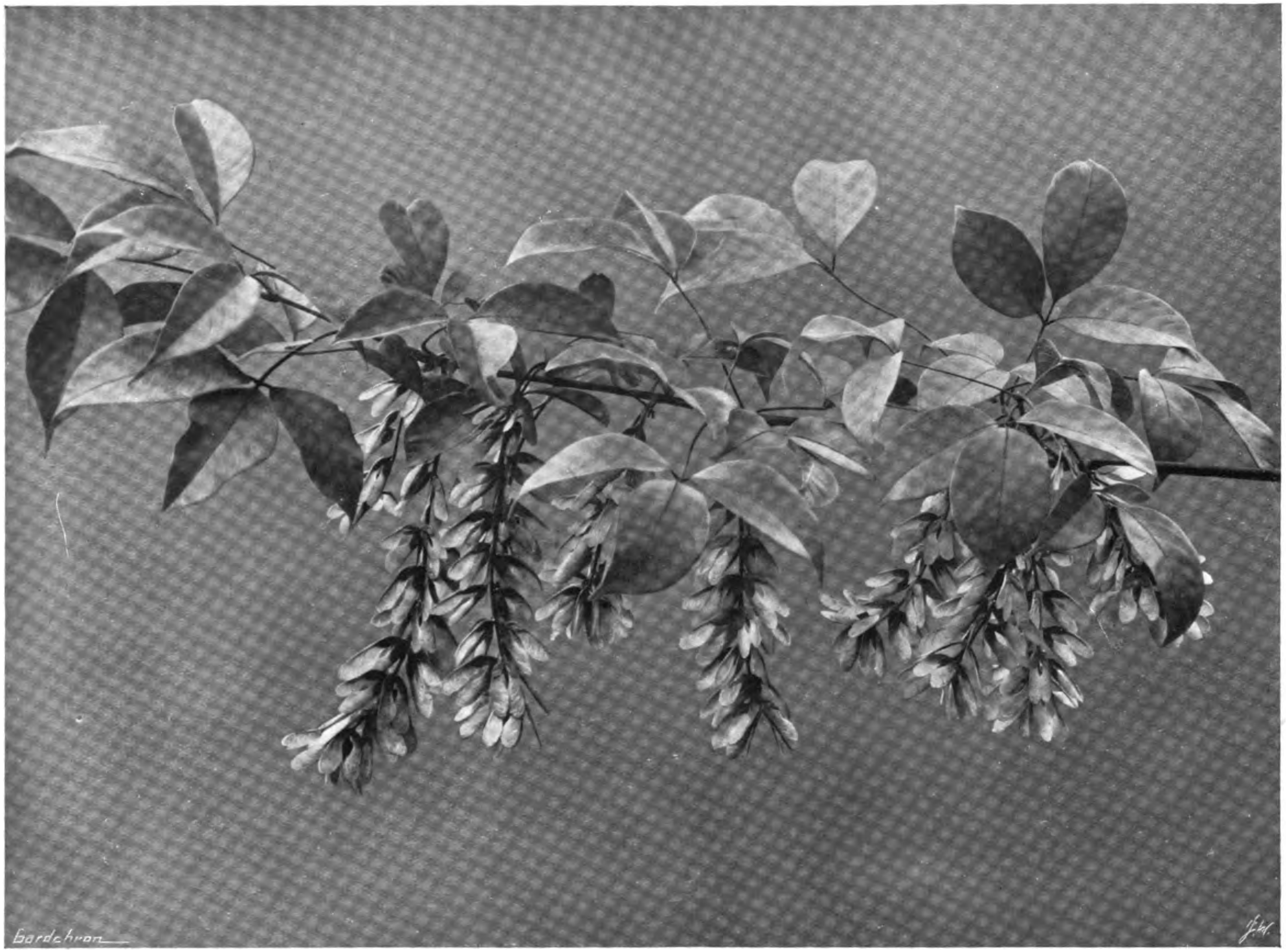

ACER HENRYI IN FRUIT.

THE Gardeners' Chronicle

No. 1995—SATURDAY, MARCH 21, 1925.

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SUPPLEMENTARY PLATE.
Acer Henryi.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty yeárs at Greenwich, 43·0

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, March 18, 10 a.m. Bar. 30·6, temp. 44°. Weather, Bright.

Crop Yield. AMONG the many subjects discussed at the Imperial Botanical Congress held in London last year none is of more general interest than that of the physiology of crop yield.* So variable are the factors which affect plant growth that even the plant physiologist who is not required to make financial profit from his experimental cultivations has not yet discovered what are the perfect conditions for any single cultivated plant. It would indeed be idle to expect that he should; all that may be hoped is that the physiologist may gradually discover how each several factor—light, temperature, moisture, and the like—affects the vital processes of the plant. It is along these lines that, as the report shows, progress is being made. The chairman of the Plant Physiology section, Dr. F. F. Blackman, has already made valuable contributions to this subject by demonstrating that any one of the factors which normally influence growth may, at one time or another, have a limiting effect. Give a plant increasing supplies of water and up to a certain point—which naturally varies with the kind of plant—the rate of growth increases. Beyond that point it does not. The reason why growth does not progressively increase is in this case simple; some other factor essential for growth is brought into play; temperature for example. With water available to a plant growing under a certain congenial temperature absorption goes on with increasing rapidity, but inasmuch as temperature has something to say as to the rate at which water is absorbed there must come a moment when the plant at a given temperature is taking up all the water it can. That point passed the addition of more water results in no increase in the rate of growth. If, however, the temperature of the plant be raised the plant's water-absorbing capacity is, or may be, increased, and more water is absorbed. This is but a crude illustration of the operation of a limiting factor, but it is worth stating inasmuch as neglect to observe the operation of the principle may lead experimenters, and indeed practical growers, to serious error. Experiments carried out by Dr. Gregory on the rate of growth of Cucumbers under controlled conditions of light and temperature provide a better illustration. Cultivated in artificial light, of intensity about that of average winter sunlight, growth increases as the temperature rises, but reaches an optimum at 77° F. At higher temperatures—in these conditions of illumination—the rate of growth not only does not increase, but actually falls off. Only if the light intensity be raised is the plant able to make use of the opportunity for more rapid growth provided by higher temperatures. Here surely is a fact to which those who cultivate under glass cannot give too much attention. Forcing is a subtle process, and as those who practice it know, requires much experience. It is easy to waste fire heat and it is no less certain that any heat given in winter in excess of what the plant can do with is productive of no good, but of some, and it may be much, harm. So also there is a moral here for the gardener impatient to sow seeds. After the wet winter, with sodden ground, he will do far better to wait awhile and work off his impatiences by thorough surface cultivation than to hurry his seeds to their graves in the unkindly cold and wet ground. By resorting to expedients, such for example as covering the seed beds with paper to hasten germination, he will do far better by deferring seed-sowing than had he given way to his natural desire to get things going in the garden by sowing before the ground is ready for the seeds. How baffling are the effects of external conditions on growth is shown by Prof. V. H. Blackman's careful experiments on the effects of electrical discharge on the development of plants. The many experiments made in the open on growing crops demonstrated two things; one, that a beneficial effect is often obtained; the other, that exact knowledge is necessary before anyone can be advised to embark on a large scale of "electro-culture." Working under laboratory conditions Blackman has shown that whereas currents of relatively low intensity (10^{-9} amp.) are effective in increasing the yield of dry weight and grain of Barley and Maize, currents of higher intensity (10^{-7} amp.) are injurious. No less interesting is the observation that stimulation by a current of appropriate strength is followed by a beneficent after-effect. When the current is cut off, the plant previously subjected to it maintains for so long as five hours its rate of growth—it may be so much as fifteen per cent. above normal rate. The after-effect is, in fact, greater than the direct effect, and is greater with a short period than with a long period of exposure to the discharge. Wherefore it would seem that the horticulturist of the future may see a travelling electrical plant peregrinating among the fields, stimulating the young crops and moving on to the next field to speed up growth there also, and so on over the whole countryside.

Our Supplementary Plate.—Acer Henryi was discovered by Prof. Henry in central China, and was introduced by Mr. E. H. Wilson in 1903, when he was collecting for Messrs. James Veitch and Sons. It is a distinct species which may become a tree thirty feet high. It is well furnished with leaves composed of three leaflets, these differing from those of other tri-foliate Maples in having entire margins to the leaflets; it also possesses stalkless flowers. The flowers themselves are borne in slender, downy spikes and are produced in May. They are followed by handsome fruits which are red when young and borne in racemes six to nine inches long. Our supplementary illustration shows a fruiting branch.

Scottish Sweet Pea Trials.—With the introductions from Messrs. Dobbie and Co., Marks Tey; Messrs. E. W. King and Co., Coggeshall; Messrs. Torrance and Hopkins, Busby, and Mr. E. W. Mackay, Sussex, the entries for the Scottish Sweet Pea trials at Helensburgh have now been closed. The varieties represented number sixty-two, and as eighteen plants of each are being grown the total of 1,116 plants exceeds expectations and has fully occupied the space at the disposal of the Committee. A number of growers, including Mr. W. J. Unwin, have intimated their intention of patronising the trials more extensively next year. The trials will be judged in July.

Fruit Marketing and Distribution.—The series of investigations recently set on foot by the Ministry of Agriculture into the marketing of home-grown produce has now been extended to cover the marketing and distribution of home-grown and imported fruits. The investigations into fruit-marketing will be of an exhaustive character, and every effort will be made to secure full and accurate information on all points. Reports based on the results of these investigations will be published as compiled.

Horticultural Lectures at Chiswick.—Under the auspices of the Chiswick Public Library and Museum Committee, a course of four horticultural lectures will be given at the Chiswick Public Library, on March 19, March 26, April 2 and April 7. In the order of these dates the lectures and lecturers will be "Garden Flowers with Special Reference to Sweet Peas," by Mr. John Weathers, of Isleworth; "The Cultivation of Roses," by Mr. Courtney Page, Hon. Secretary of the National Rose Society; "Popular Vegetables," by Mr. A. Lovejoy, of Messrs. Sutton and Sons; and "Fruit Growing for Amateurs," by Mr. F. H. Hughes. The lectures will commence at 8 p.m.

Fruit-Growing in Scotland—Very gratifying evidence of the fine progress fruit-growing is making in Scotland comes from various districts. At a recent meeting of the Governors of the Aberdeen and North of Scotland College of Agriculture, a communication was submitted from the Advisory Committee of the Inverness area reporting that the work done in the development of horticulture and fruit-growing between Elgin (Morayshire) and Tain (Ross and Cromarty) by Mr. J. Anes, the College representative, has had splendid results. No such advance, it was declared, had been made for years. At the same meeting, Mr. Greenhowe, lecturer on horticulture in the College, submitted through the Research Committee a request that four fruit-testing stations be established, and that these be located as follows:—That a principal station be established in the vicinity of Forres, in Morayshire, and that it extend to five acres; that a sub-station be established in the vicinity of Laurencekirk (Kincardineshire), and that it extend to three acres.; that a sub-station be established in the vicinity of Dingwall (Ross-shire), extending to two acres; and that a sub-station be established at Craibstone (the College lands near Aberdeen), by extending the present horticultural department by two acres. The request was generally approved, and a sub-committee appointed to report on the matter. Then from Cupar (Fifeshire) comes the intimation of the incorporation of the Rumgally Company, Limited, with a share capital of £2,000, having for its object the leasing of land on the estate of Rumgally, near Cupar, for the purposes of husbandry, including the growing of Raspberries. The company is to plant twenty acres of Raspberries this season, and if the venture proves a success, large extensions may be made, and thus provide labour, particularly in the packing season, for the inhabitants of Cupar and Ceres. Mr. J. L. Anderson, of Pittormie, who is largely interested in fruit-growing in Perthshire, and also in Pittormie, is the chairman and managing director of the new company.

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* *Imperial Botanical Conference.* Report of Proceedings. Edited by F. T. Brooks. Cambridge University Press, 1925. Price 15/- net.

American Cure for Red Spider.—In a bulletin dealing with the cultivation of Tomatos in glasshouses* Mr. J. H. Beattie of the Bureau of Plant Industry, U.S.A. recommends spraying with two pounds of soap and one-eighth pint of nicotine sulphate to ten gallons of water, for the destruction of red spider on Tomatos. He refers to the value of syringing the plants with clear water, which washes the pests from them, the majority of the spiders being unable to return to the plants. He does not recommend spraying Tomatos when they are in flower, as this might interfere with the proper development and distribution of the pollen.

Royal Gardeners' Orphan Fund.—Among recent benefactions to the Royal Gardeners' Orphan Fund are the proceeds of a whist drive and dance organised by Mr. T. Pateman, of Brocket Hall Gardens, Hatfield, at Lemsford, and of a dance arranged by the employees of Messrs. William Thomson and Sons, The Tweed Vineyard, Clevenfords.

Bristol Floral Fête.—So much success has attended the exhibitions of the Whitehall Horticultural Society that the officers and committee have decided to extend their operations during the present year and hold an exhibition on Friday and Saturday, July 24 and 25, under the title of the Bristol Floral Fête. The exhibition will be held in Messrs. H. J. Packer & Company's fine recreation ground at Whitehall, Bristol. The schedule contains one-hundred-and-forty-seven classes for plants, flowers, fruits and vegetables, in addition to a small industrial section. Very liberal cash prizes are offered for groups of plants and for collections of flowers, fruits, and vegetables. Messrs. Blackmore and Langdon will present a silver cup to the prize winner in the class for a group of Begonias, and Dr. Cairns, one of the vice-presidents of the Society, has presented a cup to be awarded to the winner of the highest number of points in certain specified members' classes, but this cup will have to be won three times, not necessarily in succession, before it becomes the property of an exhibitor. In twelve of the principal classes silver-gilt medals will be awarded to winners of first prizes. Schedules may be obtained on application to the secretary, Mr. Thomas Crawford, The Limes, Johnson's Road, Whitehall, Bristol.

Mr. Edward Curry.—Born in Somerset, and in his earlier years engaged in farming, Mr. Curry came to London whilst still a young man and engaged in the milk business at Islington. Whilst there he became interested in the cultivation of plants and flowers at Tottenham and in their sale in Covent Garden market, and eventually he bought about three acres of land at Leyton and commenced business as a cultivator of Ferns and bedding plants for market. He still retains this nursery, but now lives at Chingford, where he has about twelve acres of land almost entirely covered with glass wherein he grows Ferns most successfully and also cultivates Tomatos extensively. Although seventy-nine years of age and for over forty years a stand-holder in Covent Garden flower market, Mr. Curry still enjoys excellent health and takes a keen interest in the business which is now under the general management of his two sons Mr. Harry and Mr. Bert Curry, the former of whom acts as grower at Chingford, while the latter attends to the market side of the business. Mr. E. Curry is well known among Covent Garden market men, and his name must be familiar to florists all over the country to whom his Ferns go in large numbers throughout the year. Mr. and Mrs. E. Curry celebrated their golden wedding on Wednesday, March 18, and were happy in having all their seven children—three sons and four daughters—alive and well to assist in the celebration. As already noticed, two of the sons are engaged in business with their father, while the eldest son, Mr. Fred W. Curry, is a prominent flower salesman in Covent Garden.

MR. EDWARD CURRY.

National Dahlia Society.—A perusal of the newly issued schedule of the National Dahlia Society's show to be held on September 9 reveals several new features. In the principal open class for Cactus Dahlias the number of varieties required has been reduced from eighteen to twelve and the prizes have been doubled. In the leading open class for single Dahlias, and also in the one for Pompon sorts, twelve varieties are required instead of twenty-four. Especially interesting is the class for the best exhibit of floral designs illustrating the decorative value of the Dahlia. The first prize is a Challenge Cup presented by Mr. Geo. Monro, which will become the property of the first exhibitor who wins it three times, but not necessarily in succession. A novel feature of the schedule is a general invitation to contribute a short poem in praise of the Dahlia. H.R.H. Princess Louise Duchess of Argyll has promised to present a suitable prize to the writer of the selected poem. Any form of verse may be adopted, but only British subjects may compete. Competitors must send their efforts to the Hon. Secretary, Mr. W. J. Chittenden, 2, Dents Road, Wandsworth Common, S.W.11, in a envelope marked "Poem," so as to reach him not later than Tuesday, September 8.

French Chrysanthemum Congress.—The twenty-fifth annual Congress of the French Chrysanthemum Society will take place this year at Lyons, from the 5th to the 8th of November next. At the same time there will be held an International Exhibition organised by the Lyons Horticultural Society and other societies, in the Fair Palace in that town.

Honours for French Horticulturists.—M. Eugene Turbat, Secretary of the Fédération Nationale des Syndicats Horticoles de France, has just been nominated Chevalier de la Légion d'Honneur. A similar honour has been accorded to M. Philibert Savreau, President of the Syndicat des Cultivateurs de la Seine, a distinguished arboriculturist and grower of cut flowers; and the Cross of the same Order has been bestowed on M. Jacques L. de Vilmorin, who by his research work especially in Wheat and Beetroot, has rendered signal services to French agriculture.

Vegetable Prices.—According to the Ministry of Agriculture, prices of Potatos became rather easier during February, the average fall being about 5s. per ton, and for the first time for many months the index number is lower than a year earlier. The index number of other vegetables declined by seven points to seventy-four per cent. above pre-war. Carrots remained very cheap at twenty-seven per cent. above 1911-13, and Cabbages declined on the month to only forty per cent. above pre-war. Celery remained unchanged at rather over double the price in the basic years, and Cauliflowers, though 5d. per dozen cheaper than in January were two-and-a-quarter times the pre-war price. Brussels Sprouts advanced by 1s. 2d. per cwt., and at sixty-two per cent. above 1911-13 were eleven points up on the month, while Onions rose sharply to eighty-one per cent. above the price in the basic years.

Desert Plants.—An interesting account of the vegetation of the south-western desert region of America is published by Messrs. H. L. Shantz and R. L. Piemeisel in the *Journal of Agricultural Research*, and has been reprinted as a separate bulletin.* The illustrations, which appear at the end of the work, are very interesting and exceedingly well reproduced. The authors deal with the vegetation of the Coachella Valley and of the Gila Valley, Arizona. The types of vegetation are divided into groups; Yuccas and Cacti form the type of vegetation highest above sea level in the Coachella Valley, and bordering on the lower margin is an area dominated by Creosote bush, Covillea glutinosa. Other prominent plants are a desert Sage (Atriplex polycarpa), Arrowweed and Saltbush, Seepweed (Dondia intermedia), and Saltgrass (Distichlis spicata), with minor communities, particularly species of Atriplex. The object of the study of the flora of these districts is to indicate the potentialities for crop production of an economic nature.

National Carnation and Picotee Society.—Although the number of people who cultivate the purely florist's type of Carnation is not so numerous as at one time, the small band of enthusiasts who carry on the traditions of the old florists are very enthusiastic, and the National Carnation and Picotee Society is in the happy condition of having a good balance in hand and a slightly larger one than last year, the amounts being £46 7s. 6d. and £44 2s. 10d. respectively. The annual exhibition will be held in the Royal Horticultural Hall on Tuesday, July 14, in connection with the Royal Horticultural Society's fortnightly meeting on that date, and two days later an exhibition will be held in the Worshipful Company of Carpenters' Hall at the corner of Throgmorton Avenue and London Wall. Although only two days after the Vincent Square Show, it is hoped that this special exhibition will interest those in the city who are fond of beautiful flowers, and thus attract new members. The schedule for the show on July 14 includes the usual classes, and in addition a new division, comprising four classes, for blooms grown and flowered in the open border by amateurs. The *Year Book* of the Society contains two interesting articles, one on "Border Carnations from Seed," by Mr. D. G. Murray, and "The Border Carnation as a Town Plant," by Miss J. B. Wells. An appeal for new members is issued, and those interested are requested to communicate with the hon. secretary, Mr. E. G. Lowe, 65, Exeter Road, Cricklewood, N.W.

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* *Greenhouse Tomatos*, U.S. Department of Agriculture, Farmers' Bulletin No. 1431.

* *Indicator Significance of the Natural Vegetation of the South-Western Desert Region*. By H. L. Shantz and R. L. Piemeisel. Reprinted from *Journal of Agricultural Research*, Vol. XXVIII., No. 8, Washington, D.C., Government Printing Office, Washington.

Appointments for the Ensuing Week.—Tuesday, March 24: Royal Horticultural Society's Committees meet (2 days); Newcastle and District Horticultural Mutual Improvement Society's lecture. Wednesday, March 25: Instow Spring Flower Show; Wimbledon and District Gardeners' Mutual Improvement Society's meeting: Mitcham, Tooting, and District Horticultural Society's meeting; Sheffield Chrysanthemum Society's meeting. Thursday, March 26: British Carnation Society's show; Royal Botanic Society's meeting. Friday, March 27: Association of Economic Biologists meet.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Mache.*—"Pray, Mr. Editor, what is Mache?" "Mache, Madam, is Corn-salad." "I mean that beautiful Lettuce-like plant that one sees everywhere in Paris in the winter." "That, Madam, is Mache or Corn-salad." "Well, but what is Corn-salad?" "It is a very old vegetable, a sort of Valerian, which once was cultivated by everyone, and now is seldom seen." "And why not seen? I am sure we have nothing half so good in England." "Pardon me, Madam, we have *it* in England; you may buy its seed in every shop, and the salad itself in Covent Garden." "How very strange! Our gardener knows nothing about it, nor how to manage it; and it is most provoking, for we are all lovers of salad, and in winter we have nothing but Celery and bitter Endive, with Mustard and Cress. If we see a Lettuce, it is a poor, wretched thing, too tough to eat, and too ugly to admire." "Then, Madam, I would order the gardener to grow Corn-salad, as his grandfather did, if his grandfather was a gardener. It is as well, however, that he should have what is called *Mache d'Italie*, which is better than our own Corn-salad, and is what has attracted your attention in Paris." "But where can I buy the *Mache d'Italie?* I dare say our seedsman never heard of it." Perhaps not, but he may procure it from Paris in these railway days without difficulty, or from his London correspondent, who will obtain it for him." *Gard. Chron., March* 23, 1850.

Publications Received.—*Proceedings of the Imperial Botanical Conference*, 1924. Edited by F. T. Brooks. Cambridge University Press, Fetter Lane, E.C.4. Price 15s. net. *Full Value for Money in Life Assurance.* By Richard Morris. Hutchinson and Co., Paternoster Row, E.C. Price 1s. *Year-book of Pharmacy and Transactions of the British Pharmaceutical Conference.* The Pharmaceutical Press, 17, Bloomsbury Square, W.C. Price 7s. 6d. net. *The Making of a Garden.* By D. H. Moutray Read. Williams and Norgate, 14, Henrietta Street, W.C.2. Price 7s. 6d. net. *Gardening in the Tropics.* By R. O. Williams, Department of Agriculture, Trinidad. Price 2s.

BULB GARDEN.

HYACINTHUS AZUREUS.

One of the precious flowers of early spring, either in grass border or rock garden is the little bulbous plant called Hyacinthus azureus, quite as frequently known as Muscari azureum, although distinguished from the Grape Hyacinths by the open, and not constricted, mouth of its blooms. Its worth is due not only to its early flowering but also to its charm, which, had Ruskin known it, he might have coupled it with the Muscari in his eulogy of that flower in his "Queen of the Air," so charming is it, especially in grass, where its spikes of close-set flowers, some six or eight inches high, delight us with their azure-blue bells, set in their conical racemes.

Even a small clump of this plant in the border or rock-garden is full of delight in February and March, but the beauty of this Hyacinth is most pronounced when the plant is seen in flower in hundreds in the grass, not in formal groups, but scattered freely, yet not so widely as to lose its effect, an effect which will increase from year to year as the bulbs multiply by offsets and self-sown seedlings.

H. azureus, which is a native of Asia Minor, has several described varieties, but, so far as I am aware, only one, H. azureus amphibolis, is in commerce. It is rather taller and more robust than the type, but has no other distinctions to commend it. Both the variety and the type are quite cheap, the variety amphibolis being a trifle the dearer.

Other varieties are H. a. giganteus, which was figured in *The Gardeners' Chronicle*, 1898, Vol. XXIV., p. 190, fig. 52. This is said to come from Northern Cilicia, and has larger flowers.

Another variety, robustus, is reported to be even larger, but I have never seen plants of either of these forms.

There is no difficulty in cultivating the Azure Hyacinth, or its variety amphibolis, in common garden soil. The bulbs should be procured in autumn and planted about two inches deep, and, if in clumps, about two inches apart.

Mr. John Weathers, in *A Practical Guide to Garden Plants*, states that the flowers are sometimes injured by early frosts, and suggests movable protection, such as a handlight or canvas screen. I have grown this bulb for many years in several gardens, and, so far, have not found it harmed by frost, but the statement of such an experienced and careful observer as Mr. Weathers is worthy of note by those with gardens much exposed to severe frosts in early spring. *S. Arnott.*

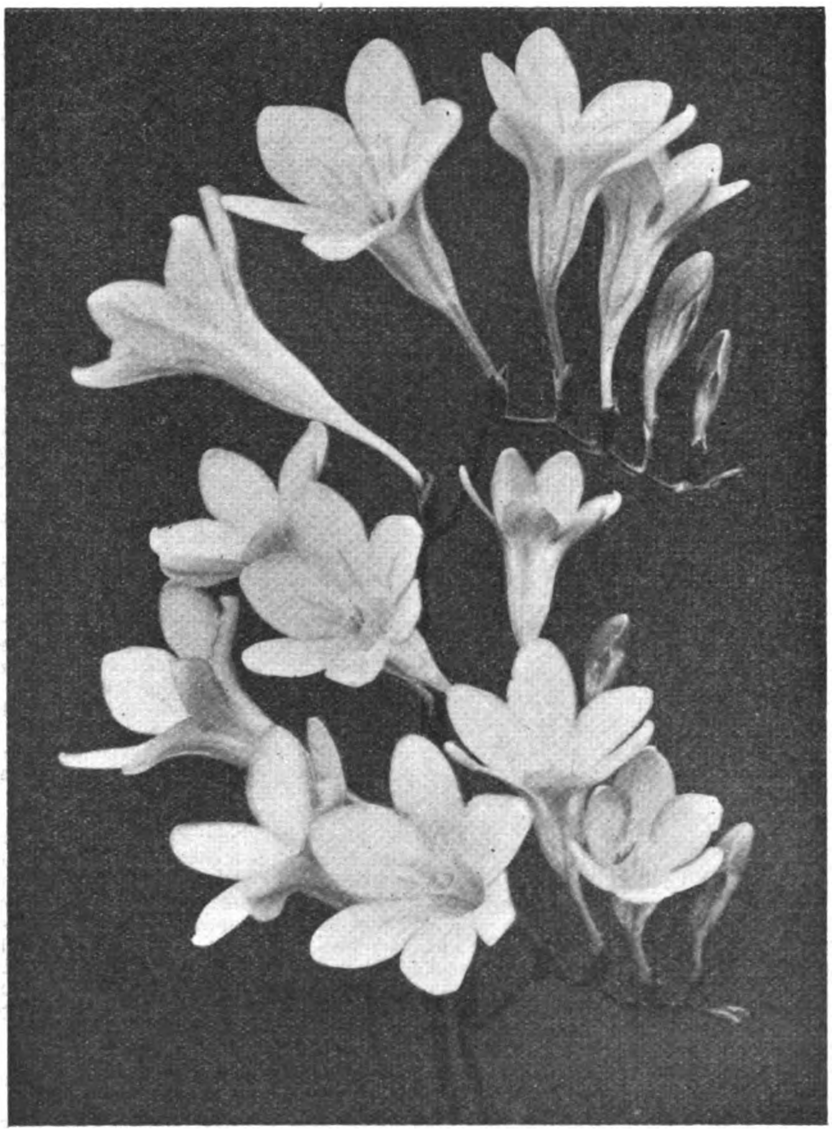

FIG. 77.—FREESIA WISTARIA.

R.H.S. First Class Certificate, March 10 (see p. 191).

The Week's Work.

ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Thunias.—After their season of rest these plants will soon be starting into growth afresh. Thunias constitute a very useful class of Orchids and produce their racemes of flowers from the apices of their new psuedo-bulbs, usually about the middle of May, and well-flowered specimens are very attractive and decorative subjects, well worthy of every attention during their short season of growth. The plants should be potted annually, and the work should be done so soon as they have commenced to grow afresh. The old compost should be shaken away and dead roots shortened to within an inch or two of the base. The usual plan is to place six or seven of the stoutest stems together in a seven-inch pot, which should be nearly half filled with clean crocks. Place coarse portions of the soil over the drainage and fill the rest of the pot with compost consisting mainly of good fibrous loam with some Osmunda-fibre and Sphagnum-moss cut up moderately finely, and sufficient crushed crocks and coarse silver sand to render the mixture porous. Place the base of the stems on to the surface of the compost, which should be about half-an-inch below the rim of the pot so that it will be convenient for watering. The soil should be pressed firmly into the pot, and each stem should be tied to a stout stake to hold it firmly. Thunias should be grown in the lightest possible position near to the roof-glass of the warmest house. For some time after re-potting until the growths have well started and the roots are growing freely in the compost water should be applied sparingly, but when the plants are well established moisture should be given liberally, supplemented by occasional applications of liquid cow manure. The foliage should be syringed frequently, taking care to wet the undersides in order to ward off attacks of red spider.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Roses.—The pruning of Hybrid Perpetual Roses may now be done, following in a week or two with the Teas and Hybrid Teas. All spindly, unripe, and diseased wood should be removed entirely, after which the severity of pruning is largely a matter of variety, conditions of wood, and purpose of flowers. Many of the newer varieties, particularly those with Tea and Pernetiana pedigree, show evidence of not tolerating the knife so well as some of the older varieties, and the pruning of these Roses calls for considerable judgment. For garden purposes, after all weak, worn-out, and badly-placed wood has been removed, at least six or eight eyes should be left on sound shoots of the preceding year's growth. The sunless autumn impeded the ripening of the growths, but the winter has been remarkably free from severe frost, and the wood generally is in good condition. Shoots of some of the strong-growing sorts may be pegged to the soil, leaving them to almost their full length.

The Rock Garden.—Renewed activity is apparent among the plants in the rock garden, and it is now easy to ascertain where any have failed to survive the winter. If strong, healthy specimens are available for filling blank spaces they will soon make headway and give the rockery a furnished appearance. If washing away of soil has been caused by recent heavy rains the damage should be made good and any loosening of soil behind stones be given attention, consolidating it where necessary.

Border Carnations.—Plants of border Carnations that have been wintered in cold frames may now be planted out, in favourable weather. The soil should have been deeply cultivated and a dressing of bone-meal worked into the surface before planting, this material affording lasting nourishment to the plants. Plant firmly at about fifteen inches apart, and if slugs are troublesome dust the plants with soot at intervals.

Lawns.—Any necessary re-placement of turf should be completed at once, and the lawns thoroughly swept and rolled when sufficiently dry in preparation for mowing.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Basket Plants.—In establishments where there are corridors or conservatories which either do not lend themselves to a general display of flowering plants or, where such displays are not called for, the employment of suspended wire baskets for growing some of those plants which are suitable for the purpose may be well worth while.

Achimenes are particularly suited to basket culture. The corms should now be shaken out of the old soil in which they have been stored during the winter. They should be started into growth in well-drained pans containing a mixture of finely-sifted peat, leaf-mould and plenty of sand, placing them thinly and evenly in the receptacles, which should then be put in a warm, moist house near to the roof-glass. Water the soil sparingly at first and shade the young plant from bright sunshine. When the shoots are about two inches high the seedlings may be transplanted carefully without injury, into the baskets, at about two to three inches apart. The baskets should be filled with soil comprising one part each of fibrous peat and light loam, not broken too finely, two parts of leaf-mould, a little well-decayed and finely-sifted cow manure and a free addition of coarse silver sand. Continue to grow them in a warm house, guarding against cold draughts. The points of the growths may be pinched twice or thrice before the plants commence to flower, to promote a well balanced effect. Plenty of water will be required when the plants are growing freely and frequent feeding when flowering. Gradually harden the plants before removing them to the cool corridor. Achimenes, however, are more or less tender, and therefore not suited to cold, draughty houses. For cool houses and where the plants are exposed to full light, the homely Ivy-leaved Pelargoniums and the procumbent varieties of Begonia are better suited. For association with them I would recommend—

Gnaphalium micranthum.—This is a very attractive glaucous-leaved perennial of drooping habit, and one of the prettiest grey-foliaged plants I know. It makes a splendid foil to the Pelargoniums (with the aid of a single stake and a few ties it may be grown into a pretty pyramidal plant too). This Gnaphalium is propagated easily by cuttings.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Black Currants.—These bushes should be examined periodically for big buds, which should be removed and burned. Spray the plants with Quassia extract at a strength of half-a-pint of the extract to four or five gallons of water; this will leave a bitterness on the wood and make it very distasteful for those insects that deposit their eggs on the buds. Quassia extract is a very safe insecticide to use, and when the spraying is in progress every part of the bush should be treated, but not so heavily that the specific runs off and is wasted. Cuttings of Black Currants that were inserted in a cool propagating pit last July should be rooted sufficiently for removal to the open ground. Plant them in rows made two feet apart and allow a space of fifteen inches to eighteen inches between the plants in the rows. Choose ground that has been well cultivated and needs no enrichment beyond a top dressing of rotted manure after planting is completed to keep the roots cool and moist through the summer. Boskoop Giant is still one of the best varieties, producing big bunches of large berries of fair flavour. The Baldwin is also a very fine sort, and Seabrook's Black is another outstanding variety. Later introductions of merit include Edina and September Black.

Protecting Fruit Blossom.—The time is approaching when growers must give heed to the sudden changes in the weather and guard the blossom of Peaches, Nectarines, Apricots, and Plums against injury by cold winds and frost. All coverings should be in readiness as advised in a previous calendar. When the weather is unfavourable for work out-of-doors nets required for protecting the fruit in the summer should be overhauled, and if repairing is necessary it should be done now. Where birds are numerous and troublesome to ripe fruit and netting is required annually, it is the cheapest and the most economical to have a standard size in length and width, provided the fruit bushes are planted in square plots. In the same way, Strawberry beds are much easier to protect when the nets are of standard size.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Cherries.—During the flowering period of all Cherries under glass admit as much air as possible to the house without causing draughts from cold winds; leave the top ventilators open at night should there be no sign of frost. It is much better to use a little fire-heat and keep a current of air circulating than to grow the plants without ventilation. Damp the bare spaces lightly early in the morning when the outside conditions are favourable, and at mid-day if the sun is out, gently dew over the flowers. I greatly prefer this method to tapping the trees, which I believe causes a good deal of injury to them, especially when they are tied to wires. A hare's or a rabbit's tail is very useful for distributing the pollen. Damp the house lightly before the sun gets too low, so that it is fairly dry again by sunset. Keep a sharp watch for black fly, fumigating slightly with a vaporizing compound even if the trees are in flower; also watch pot trees very carefully for water, examining the whole batch morning and afternoon to see if moisture is needed.

Figs.—The Fig eyes and ripened shoots that were started early last month on hot beds are well rooted and should be placed singly in 5-inch pots before they become pot-bound. The compost should consist of three parts fibrous loam and one part leaf-mould with a liberal sprinkling of mortar rubble. Pot firmly, replace the plants on the hot-bed and keep them sprayed with tepid water to encourage growth to develop. Established trees of the first batch are making quick growth and should be stopped at every fifth leaf. Begin to feed the roots with concentrated manure so soon as the fruits begin to show signs of swelling; do not crop heavily. The latest house containing trees planted out should now be closed and the trees started into growth. The night temperature should be 50°, rising to 60° by day. See that the border is sufficiently moist, as Figs cannot withstand drought at the roots at any time.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Carrots.—A good area of ground may now be sown with Carrots for the general crop. This root vegetable often fails to succeed in gardens, or sometimes parts of gardens, and difficulty is often found in producing a satisfactory crop. Every part of the kitchen garden should be tried, if there is any difficulty, until success has been attained. Nothing is better suited to this crop than wood ash and old soot, which should be worked into the ground. Rake the surface soil thoroughly until a fine tilth is obtained, then draw drills about fifteen inches apart and one inch deep and sow the seeds thinly. If extra fine specimens are required, holes should be bored to a depth of eighteen inches to twenty-four inches and filled with finely-sifted soil and sand mixed, dropping three or four seeds in the centre of each station and thinning the plants to one in each spot.

Beetroot.—A few rows of Globe Beet may be sown to follow the batch that has been raised in frames. This will ensure a succession of nice young roots between the frame-sown crop and that from the main outdoor sowing made later.

Peas.—Sow Peas for successional cropping, the height of each variety to determine the distance between the rows. It is better not to sow too many rows of the same variety at a time, thus making a better provision for continuous supplies, there being less likelihood of all the rows maturing together.

French Beans.—Make use of any spare frames for sowing successional batches of French Beans. If frames are not available, keep up supplies with plants grown in pots. In producing early vegetables, efforts should be made to maintain a continuous supply until the out-of-door crops are available.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Hardy Ferns.—The transplanting and dividing of hardy Ferns may now be undertaken. In selecting a position for Ferns in the open choose one that is shaded and protected from strong or direct winds. The compost may consist of loam and leaf-mould in equal parts mixed with a liberal quantity of coarse sand. The dead foliage of the deciduous species should be allowed to remain during winter as a protection to the plants. The evergreen species, if growing in a district free from smoke, will have all their fronds still fairly fresh; the fronds require only to be removed as they become unsightly.

Gladiolus.—Corms of the Brenchleyensis and primulinus types of Gladioli may now be planted in the open. If intended to feature as a self bed they may be spaced at one foot apart and planted with the trowel not more than three inches deep. Others that may be required for mixing with summer bedding plants may be placed in four-inch pots and grown on in a cold frame until they are wanted.

Onions.—The main crop of Onions may be sown now. Select ground that was well prepared in the autumn, and it should be made fairly firm by treading the surface. When firmed rake the ground two or three times in order to obtain as fine a surface as possible. The drills may be drawn out to the depth of about one inch and from twelve to fifteen inches apart; the latter distance is best. Sow the seeds evenly and then draw the soil into the drills, pressing it with the feet. Suitable varieties for this sowing are Blood Red, Bedfordshire Champion, James's Keeping, and Cranston's Excelsior.

Spinach.—The first sowing of Round Spinach may now be made on a warm border; sow only a few lines at a time. A successional sowing may again be made in fourteen days time on this same border, after which a more exposed portion of the garden may be used. New Zealand Spinnach should be raised under glass in pots. It is too tender to sow out-of-doors.

Strawberries.—New plantations of Strawberries should now be made. I find spring planting the best method owing to the bad action of continued frosts upon autumn-planted runners. The ground selected should have been trenched deeply and well manured the previous autumn. There are various methods of planting. In these gardens we plant the runners in groups of three, five inches apart, in the form of a triangle, allowing a distance of thirty inches from group to group, and allowing thirty-six inches between the rows. Givon's Late Prolific, Royal Sovereign, and The Duke have given the best results here.

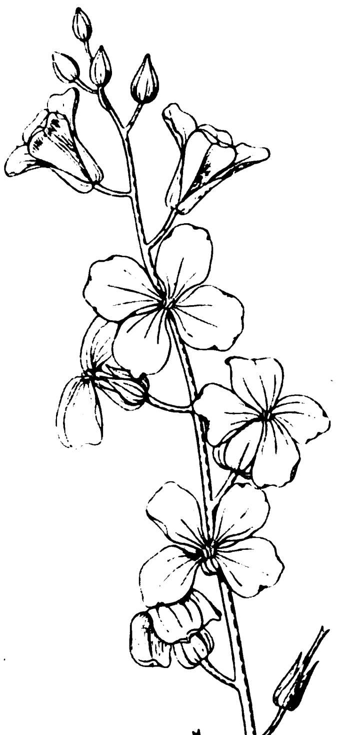

FIG. 78.—STREPTANTHUS OBTUSIFOLIUS.

PLANTS NEW OR NOTEWORTHY.

STREPTANTHUS OBTUSIFOLIUS.

THIS attractive plant belongs to the Crucifer family, being closely allied to the Arabis and Cardamine. There are about twelve species contained in the genus, all natives of Western North America. The plant here illustrated (Fig. 78) is not unlike the European Moricandia arvensis in habit and flower but differs in the character of the fruit. It is an annual, and of erect habit, growing from one to two feet high, with glaucous, amplexicaul leaves, and long racemes of large, showy flowers. The twisted petals are rose coloured and have a dark purple blotch near the base of each. It was introduced into cultivation nearly a century ago, seeds of it having been received at Glasgow under the name of "Arkansas Cabbage." In its native habitat it is found near the hot springs and amongst rocks on shelving hills close to the banks of the Red River in Arkansas. Perhaps owing to its annual character it does not appear to have become well known or grown to any extent in this country, indeed, it is doubtful whether S. obtusifolius is now in cultivation. The other members of the genus are all of similar character, differing chiefly in the shape of the lower leaves and in the colour of the flowers. *W. I.*

A NEW SPECIES OF XERONEMA.

A LETTER from Mr. H. Baillie, the Librarian at Wellington, New Zealand, contains the information that a new species of Xeronema has been discovered on one of the Poor Knight Islands. These islands are situated off the east coast of North Island and were discovered by Capt. James Cook in November, 1769. It is interesting to notice that this new species has remained so long undiscovered, as Dr. Cockayne visited the Islands some years ago, but appears not to have ascended the cliffs where the new plant was found.

The specimens recently placed in the herbarium of the Dominion Museum were collected by Messrs. W. R. B. Oliver and H. Hamilton, members of the Dominion Museum Expedition which recently visited some of the island groups north of Auckland. Mr. W. M. Fraser, the engineer of Whangarei Harbour, knew of the existence of "a peculiar species of plant" on Poor Knight, but no specimens were obtained until the recent visit of the Museum Expedition, consequently the plant remained unknown and its relationship unsuspected.

Xeronema Moorei, found in New Caledonia, was described in *Bull. Soc. Bot. France* in 1864 (Vol. XL) and introduced to cultivation in Europe by M. Jean Linden, of Brussels, in 1875. It was named after Mr. C. Moore, Director of the Sydney Botanic Garden. Hitherto this has been the only species known. About thirty-five years ago the writer had under his care several specimens of this interesting Liliaceous plant in the New Plant Department, at Messrs. James Veitch and Sons' Nursery, Chelsea, a department rendered famous by Mr. John Heal, V.M.H., who was for so many years in charge of it. The flowering of a specimen was quite an event. The plant is almost stemless and has ensiform leaves, sheathing at the base, and from twelve inches to eighteen inches long, many of them arching slightly. The inflorescence has been aptly described as resembling a crumb brush; the stout stem is about six inches long and then turns abruptly, almost at a right angle, and this more or less horizontal portion bears the flowers, all of which turn upwards, the whole suggesting a brush. The likeness is accentuated by the fact that the stamens are the most conspicuous portion of the flowers, being twice as long as the six-lobed perianth; the colour is almost scarlet, with a purplish tinge, while the anthers are dark purple.

The new species, as yet unnamed is said

to be larger than X. Moorei, with spikes from six inches to twelve inches long, carrying bright-red flowers. The plants grow on cliffs in the highest parts of Poor Knight Islands, where they form tussocks so large as a moderate sized New Zealand Flax. Further information concerning this species will be looked forward to with interest, as the discovery seems to strengthen the opinion held by many botanists and geologists, i.e., that in bygone days New Zealand was an extension of the Malayan region. *C. H. C.*

INDOOR PLANTS.

CLIVIAS.

THE Clivias, of which several very fine forms are in cultivation, constitute a group of greenhouse plants noted for their attractive decorative qualities. They are valuable for the embellishment of the conservatory, and both plants and cut flowers may be employed to much advantage in the decoration of the drawing room and other indoor apartments. Plants of moderate size are probably the best suited to growing in conservatories and, associated, with other subjects, they present an attractive appearance, while for particular purposes large specimens may be grown by putting several plants in a ten-inch or twelve-inch pot and these when well-grown make objects of great beauty.

With a large stock of plants and a well arranged scheme of culture, Clivias may be had in flower over a considerable period of the year and even with a comparatively small number of plants their attractively coloured flowers may be enjoyed from the latter part of the winter to the beginning of summer by simply accelerating the flowering of some and retarding that of others.

In common with other Amaryllids Clivias require a long season of rest, hence when it is desired to retard the flowering period of batches of plants this resting period may be prolonged. Complete drying off, however, should not be practised, as the foliage is persistent and should not be allowed to shrivel.

Clivias require liberal supplies of water when making growth, hence, when re-potting, care should be taken that the drainage is efficient. The best time to re-pot those requiring more root space is soon after they have flowered, as they are then beginning to make new growth and in a condition to become established quickly in the new soil. Vigorous examples will need simply potting on in a receptacle one size larger and should have as much soil as possible removed from the surface, leaving the ball intact.

Plants that are not particularly vigorous and have lost some of their roots should have the ball of soil reduced as much as possible and be put back into the same-sized pot. Specimens that do not require root-disturbance should have as much of the old top soil taken away as can be removed without injury to the roots and receive a top-dressing of compost as prepared for potting. Being strong growers and rank feeders, a rich compost made of two parts good fibrous loam, one part decayed manure, a little lime rubble or sand and a sprinkling of bone meal should be employed. After re-potting or top-dressing, as the case may be, the plants should be placed in the stove or intermediate house to enable them to have the benefit during the growing season of rather more warmth and atmospheric moisture than the greenhouse affords. Afford water sparingly until the roots are growing freely in the new compost, after which copious supplies of moisture will be necessary during the remainder of the growing season. When growth is completed the supply of moisture should be gradually reduced and the plants removed to a cool house where they may be kept comparatively dry until again wanted for flowering.

C. miniata is one of the earliest introduced species, and both it and its variety splendens are still worth growing. Some of the newer varieties such as Admiration, Acquisition, Marie van Houtte and President show a marked improvement on the typical form, the flowers being larger with brighter and more refined shades of colour. *W. Auton.*

CANNAS.

CANNAS were grown largely a few years ago as sub-tropical foliage plants. Owing to careful breeding and selection, varieties of dwarf habit, possessing flowers of a variety of rich tints have been raised and these are valuable as decorative subjects for the garden and conservatory.

The seed of the Canna is so hard that the germ bursts through the strong covering with the greatest difficulty. A safe plan to facilitate germination is to soak the seeds in water for twenty-four hours, placing the vessel containing the seeds in the stove or greenhouse.

A brisk heat is required for the germination of the seeds, and care must be taken that the soil is kept in a moist condition. Germination is slow but the young plants grow quickly under proper treatment.

The Canna is a gross feeder and needs a rich compost. Plants raised from seeds sown in January will flower during the following summer. Where the necessary heat is not available for a January sowing a later sowing will provide plants which will be excellent for autumn and winter flowering in pots.

Named varieties are most serviceable for various colour schemes in the garden. They may be increased by division of the fleshy rhizomes in spring, rooting them in boxes or pans containing leaf-mould. Slight bottom heat will assist in the formation of new roots. Pot the plants as top growth becomes active, and set them out in June in rich, well-prepared ground. They will flower until cut down by early frost, when the roots should be dug up and stored in a frost-proof, dry cellar for the winter. If desired some of the plants may be taken up before frost injures them, potted, and placed in heat, where they will continue to flower.

CARNATION BARONESS DE BRIENEN.

THIS variety (see p. 173) is excellent for growing on in large pots. Owing to the dense habit of growth special care is necessary in keeping plants of Baroness de Brienon clean, and free from red spider. With large plants we have found the best method is to thin the young side shoots before they become too crowded.

Growth of this variety is slower than many others, but when healthy plants are secured and red spider kept in check, the foliage of plants growing in large pots is very fine and of the rich hue which cultivators love to see.

Regarding the value of Baroness de Brienen in winter we have found that young plants stopped in June are not so serviceable as older specimens. *C. Ruse, The Hyde Gardens, near Luton.*

ORCHID NOTES AND GLEANINGS.

HYBRID CYMBIDIUMS.

THE displays of these plants at recent exhibitions have aroused much interest and drawn attention to the many fine qualities of these beautiful Orchids. The length of time their flowers may be enjoyed, either growing on the plants or as cut blooms, make them invaluable for decorative purposes in dwelling rooms, indeed, few other plants are better adapted to the decoration of large rooms, as they have graceful foliage and noble flower spikes.

Although there are some fifty species of Cymbidiums known, many of merit, they are of small account compared with the best of the hybrids, of which upwards of one-hundred-and-sixty have been recorded. No plant has been improved to the same extent in such a short time by hybridists, and the varieties comprise almost an unlimited choice of colours.

A careful analysis of the parentage shows the predominent influence of C. insigne, and from this noble plant many of the very best varieties are descended. Although C. insigne is, in some cases, considered a somewhat bad grower, its progeny is invariably of a most vigorous and free-growing nature.

When it is considered that these hybrid Cymbidiums thrive in a cool, intermediate temperature, there is no wonder at their great popularity in these days of dear fuel.

The roots of Cymbidiums are thick, fleshy, and freely produced; but not capable of pushing through hard substances, hence the plants should not be potted too firmly.

The receptacles should be provided with ample drainage, filling them with broken crocks to not less than one-third their depth.

The compost should consist of fibrous loam and rough peat in the proportion of two of the former to one of the latter, in which some broken crocks or bricks may be mixed to keep the whole porous and open. It is advisable to remove the small, earthy particles both of the peat and loam, and for small plants slightly more peat may be used, as, being more delicate, they appreciate a slightly lighter compost.

When well rooted and in full growth, Cymbidiums should receive water at the roots whenever they become dry; but when at rest much less moisture will suffice, in fact, if too much is given the roots will decay, therefore only sufficient is necessary to prevent shrivelling.

Re-potting is best performed some little time after the plants have finished flowering and the young growths have attained some considerable size and are about to push forth new roots.

These Orchids resent root disturbance, and when re-potting is done sufficient room should be given them to allow of two years' growth at the least, and as the plants flower more freely when in a pot-bound condition it is often advisable to feed them with weak liquid manure to carry them over to another season.

After re-potting, the plants should be watered carefully, as an excess of, or too little, moisture, may result in the loss of valuable roots.

The plants should be shaded from the direct rays of the sun, and the syringe should be used on the undersides of the leaves to prevent attacks of red spider.

Although not attacked by many insect pests, there is a small scale which sometimes infests these plants, and this needs to be removed by hand-sponging, using a safe insecticide for the purpose—not too strong, as the leaves are easily disfigured. At all times Cymbidiums enjoy a free circulation of air, and resent a close, stuffy atmosphere, but draughts must be guarded against. There is no reason why these plants should not be grown in gardens where no pretensions are claimed to Orchid growing, as they will succeed under similar conditions to warm greenhouse plants, provided they are shaded from the sun.

Amongst the best and most useful of the numerous hybrids are C. Alexanderi, C. Castor, C. Pauwelsii, C. Schlegelii and C. Gottianum. *J. T. B.*

CULTURAL MEMORANDA.

CLEMATIS.

WHERE the pruning and training of climbing plants is not yet finished, the work should be pushed forward and early completion aimed at, leaving always until after the flowering period those subjects which flower on the growths of last year.

The Clematis includes groups of hardy climbers which provide a gorgeous display of flowers over a long period. The Jackmanii group is noteworthy for its great vigour and long period of flowering. The flowers are borne on the current year's growth, hence the plants may be pruned almost back to the old wood if necessary. The lanuginosa group also flowers on the current year's growths, but is less vigorous generally, and in consequence should not be pruned quite so hard. When growing on pillars or trellises a shortening back of some of the growths should be made so that new growth may be encouraged from the base to maintain the whole area furnished. The Viticella group, although bearing much smaller flowers than the foregoing are well worth growing, and the flowering season and treatment are about the same. The patens and florida groups both flower on the wood of the previous season, and generally need little pruning beyond a thinning out of the old growths immediately after the flowering period.

It should be borne in mind that the Clematis is a gross feeder, and that good results can only be obtained by liberal treatment. All loose soil on the surface should be removed annually, and rich, new compost substituted. *W. Auton.*

WATER GARDEN.

MIMULUS LUTEUS.

THIS handsome American plant may be considered not only the most stately and beautiful of all our naturalised aliens but the most successful as a coloniser, since it seems to have spread to all parts of this country and established an inpregnable position in our flora, which includes no species of Mimulus. It grows rampantly in boggy soil or shallow water, a character it has bequeathed to the many hybrids raised from it.

The flowers are rich yellow, often speckled with brown, very large, and produced in extraordinary abundance throughout the flowering season from June onwards.

The wild plant, in so far as my own observation goes, varies to a most remarkable extent in stature. I have measured the flowering stems of some plants growing on the muddy banks of a tidal river that almost reached the height of four feet, being somewhat "drawn" by having to contend with taller herbage. Two feet would appear to be the average height of the plant here in the west, but it dwindles to a few inches by the time it has crept up stream-sides and reached the moors. What the stature of M. luteus was when the plant was introduced a hundred years ago I do not know, but presumably it was not over one foot, probably less, and if that is so the plant serves as one of those interesting examples of the effect of unusual conditions of soil and climate upon growth.

A few years ago I found on a Welsh moor a quantity of M. luteus, in which the lower segment, or lip, of the flower was a rich crimson-maroon, only a thin marginal line of yellow being retained. This form is even more vigorous than the type, and the foliage is somewhat larger and a darker green; the flowers are above the average size and produced on very sturdy stems nearly two feet in height. *J., North Wales.*

IRIS GARDEN.

HERMODACTYLUS (SYN. IRIS) TUBEROSUS.

THIS quaintly-flowered Irid is very attractive during February and early March; the tubers should be planted in a light, well-drained soil in full sunlight on the rock-garden or in the bulb border.

The leaves appear during the late autumn; the outer ones are lanceolate, about one foot in height, while the inner ones are tetragonal and weak. The flower, supported on a stem one foot to fourteen inches high, usually opens towards the end of February; it is solitary. The limb is about two-and-a-half inches deep; the falls are a velvety-brown, almost black, while the standards are green or greenish-yellow; the spathe has usually only a single, large green valve, which frequently overtops the flower.

Hermodactylus tuberosus is a very interesting early flower for the rock-garden; a few blooms are sometimes offered in Covent Garden Market, from the Channel Islands, I believe.

The plant increases freely under congenial conditions. H. tuberosus was one of the earliest introduced members of the Iris family, being collected in the Levant so long ago as 1597; it was figured in *Bot. Mag.* tab. 531. The popular name of this plant is the Snake's Head Iris.

IRIS JAPONICA.

THE flowers of this Iris are so very beautiful and the plant is so easily cultivated, that a place for it should be found in every garden, large or small. It is sometimes known as I. fimbriata; it flowered for the first time in this country somewhere about 1794, and is figured in *Bot. Mag.*, t. 373. Usually treated as a cool greenhouse plant, it should prove hardy in a sheltered position; here, in Gloucestershire, it has withstood the cold of the past two winters at the foot of a west wall.

The prettily-formed, pale blue flowers, with their yellow markings, are produced indoors during March and April, but the plant does not flower in the open before May or June.

A well-drained, loamy soil and abundant moisture during the growing season are all that the plant requires, with infrequent disturbance and an occasional surface-dressing of soil.

This Iris is easily propagated by division of the rhizomes; it is an evergreen species, and the bold, light-green foliage is no mean attraction in gardens. *Ralph E. Arnold.*

ALPINE GARDEN.

ANDROSACE CHUMBYI.

ANDROSACES must be included among those plants which require a little special care throughout the winter in the neighbourhood of London. In most species the foliage of Androsaces is covered with minute hairs, packed so closely together that the soot deposited by the London atmosphere is held and usually kills most of the plants during the winter. Fortunately, there are one or two kinds that can withstand this sooty deposit among the dense, leaf hairs, and A. Chumbyi is one of them. Sometimes this plant is bracketed with A. sarmentosa, but it carries slightly larger flowers than the latter.

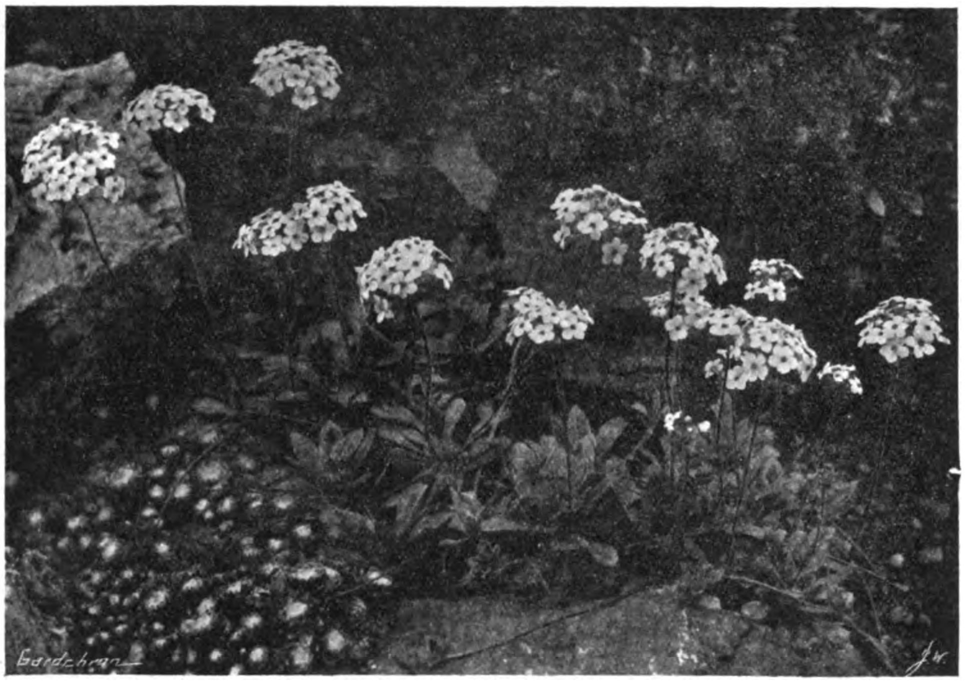

FIG. 79.—ANDROSACE CHUMBYI.

The plants shown in Fig. 79 are growing in the gardens of which the writer has charge in Croydon. The plants are very healthy, as may be gathered from the size of their leaves and the strong and lengthy runners they are developing. The position is a semi-shaded one, the shade being provided by two very large Silver Birch trees, which are about thirty feet south of the plants. These Androsaces are set upon a small, sharp slope, and have been in position many years, but all through the very hot and dry period of three years ago they were never given water.

The large leaves form when the plant is in flower, die in the autumn, and remain on the stem through the winter; the uppermost leaves then form into a tight little rosette, almost hiding the dead, lower leaves, upon which the rosette seems to rest. The flowers are similar in form to those of a Primula, of a bright, glistening pink colour, and the foliage has the appearance of being silvery; the plants are growing in ordinary, light sandy soil, with a mixture of peat, the whole being well drained.

Plants are easily propagated from the runners, these being planted direct into the open ground of the rockery, about four inches apart, in January, or early February; these young plants must be kept well watered through May. *Mark Mills, Coombe House Gardens, Croydon.*

VINCA HERBACEA.

THOUGH by no means a new plant, having been introduced from Hungary in 1816, V. herbacea is comparatively rare in gardens and it is not included in many trade lists. This seems odd seeing it is the most distinct, if it is not, as was Farrer's opinion, the most "supremely beautiful Periwinkle of the family." Further, V. herbacea is hardy and quite easy to cultivate in any average loam, enjoying rambling about some sunny slope on a rock garden ledge, and whilst it employs the same means of spreading as its congeners, I have never heard of it becoming too aggressive.

V. herbacea, as the name implies, is an herbaceous perennial, sending out slender, prostrate branches a couple of feet or more in length, these being sparsely furnished with pairs of narrow, pointed leaves. At the axils of these latter the star-shaped flowers, of a clear, dark blue, appear singly in sping and summer. Individually, these blossoms may at first be disappointing, but when the plant has covered several square feet, as it should be encouraged to do, the effect is very delightful. Propagation is simple, for the branches root at their tips, as do those of other species of Vinca. *A. T. J.*

CASSIOPE TETRAGONA.

MUCH interesting and suggestive matter for the cultivator of alpine plants is contained in the report of the Masters' Lecture by Professor A. C. Seward, D.Sc., F.R.S., in the *Journal* of the Royal Horticultural Society recently issued to the Fellows (January, 1925, Vol. 1, Part. 1), the title being "Arctic Vegetation Past and Present." The lecture is full of information and throws some considerable light upon the difficulties we experience in some districts in endeavouring to cultivate with success a number of the plants which have come to us from the Arctic regions or from high mountains where almost similar climatic conditions prevail. Among these is Cassiope tetragona, frequently known in gardens as Andromeda tetragona, one of our most charming dwarf shrubs and a real delight when flourishing in any rock garden. Professor Seward writes of its "delicate yellow bells," while C. tetragona universally, so far as I can recollect, is described in our books of reference as having "white" or "pure white" flowers. I have flowered it myself and have seen it in a fair number of gardens and it has always given white flowers. It is figured in various publications, and I do not remember ever seeing it with even "delicate" yellow bells.

I have just turned up several works, and among them Wooster's *Alpine Plants*, where it is described as "pure white," this being borne out by the coloured plate. I have been wondering whether the Cassiope tetragona seen by Professor Seward is a distinct variety or if the delicate yellow coloration is due to climatic conditions. Of course, I quite accept the learned Professor's description. It would be a joy to many to have a yellow Cassiope, although it is difficult to conceive that it would be more charming than, even if equal in beauty to, the lovely waxy-white one we possess. This exquisite, rather creeping evergreen Cassiope, with its branches adorned with elegant, imbricated leaves, and ornamented with its white bells, is one of the most cherished alpines we possess. One point of practical importance arises and this is that in some parts of this country C. tetragona does not withstand our winters satisfactorily. This is particularly the case in wet districts where a heavy autumn and early winter rainfall is followed by alternations of frost, snow, sleet, and rain later in the season. In this respect C. tetragona does not differ from many other plants, but it is so lovely that the protection afforded by a sheet of glass or other overhead shelter is well repaid. Grown in sandy peat or yellow loam in a sheltered and rather shady position where it is happy and flowers freely, this six-inch or eight-inch high shrub is a real delight in March and April when it blooms, and a source of joy at all other times as well.

PENTSTEMON DAVIDSONII.

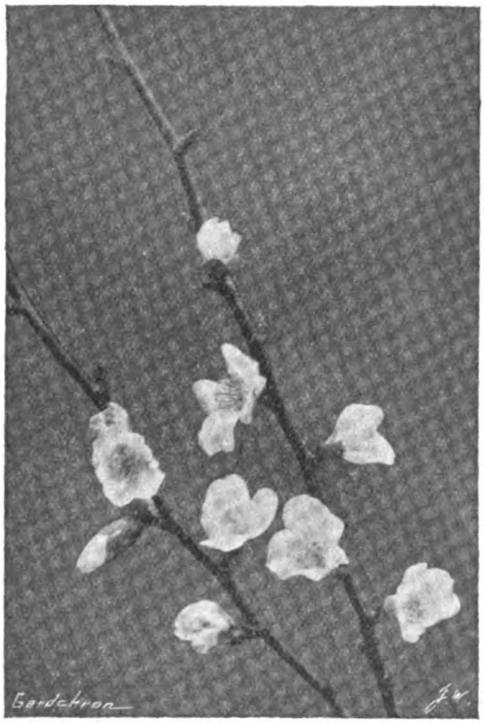

FIG. 80.—PRUNUS DEHISCENS: SHOWING FLOWERS.

SHRUBBY Pentstemons include some lovely little plants which are ideal subjects for the rock garden and command universal appreciation. As a rule they are quite dwarf and are in place in the choicest collection of alpines, not only in point of their dimensions but also because of the rare beauty they generally possess in their tufty or trailing branches and their numerous flowers.

P. Davidsonii has flowers of a showy shade of ruby-red, and when first shown in London excited a great deal of attention among alpine growers. It soon found favour and has proved a generally satisfactory plant, although I have seen it badly scorched by frosts following on a wet winter—a trying sequence to many plants which may properly be called hardy. It grows only three or four inches high, has greyish-green leaves and the gay flowers already referred to.

I believe it was when it was first exhibited in London that I saw it in bloom and was pleased to make its acquaintance. It seems to like a gritty, well-drained soil, consisting of loam, leaf-mould and sand with some grit. It has been named P. rupicola as well as P. Davidsonii, but is generally found in nurseries and gardens under the latter name, which I have adopted here. It is increased by cuttings. *S. Arnott.*

NOTES FROM GLASNEVIN.

PRUNUS DEHISCENS.

THIS little-known species is one of the early-flowering members of the genus and at the end of February, it was furnished with a fair number of open flowerss (see Fig. 80). Many more are to follow, and although the earliest flowers are liable to be destroyed by frost a later display is assured for some time to come.

The Glasnevin plant (Fig. 81) was raised from seeds received from Professor Sargent of the Arnold Arboretum in 1912, having been collected by Mr. E. H. Wilson, in Western Szech'uan (No. 4029). In habit the plant is very distinct, forming a short, stout stem which branches a little above the ground level, the subsequent growths continuing to branch and ramify in all directions until ultimately a densely twiggy, round bush is formed. The plant is remarkably free-flowering, the flowers appearing on the year-old wood on twigs quite in the centre of the bush as well as on the outside; in colour they are rose-pink in the bud stage, paling somewhat when fully open, and are then about one inch in diameter. The leaves are deciduous and variable in size, the largest about one-and-a-half inch long and half-an-inch wide, the petiole short and the margins crenulate. Fruits have not yet been produced on our plants, the largest of which is seven feet high by six feet through.

[Prunus dehiscens was named by Koehne and described as a new species in *Plantae Wilsonae*, Vol. I., p. 271, but in Vol. III., p. 432, the statement is made that "*Prunus dehiscens* is probably not different from *P. tangutica* Koehne." EDS.]

BEGONIA MANICATA.

THIS is a Mexican species of easy cultivation in a warm greenhouse and one which produces a wealth of bloom for many weeks in early spring. The stem is thick and creeping, bearing large leaves with long, stout stalks, furnished with red, scale-like hairs. The flower stalks are erect, rising a foot to fifteen inches above the foliage and bearing a large panicle of pale pink flowers. The flowers are small, but produced in such profusion as to compensate for their lack of size; in some plants the flowers are rosy-pink, and a group of several plants makes a very pleasing display.

BULBOPHYLLUM SILLEMIANUM.

A NATIVE of Burma, this is one of the most distinct and beautiful of a remarkably interesting genus of Orchids. It was described in the *Gard. Chron.* in August, 1884, and is therefore not a new plant. The pseudo-bulbs are conical, each bearing a strap-shaped, pointed leaf. The flowers are borne on scapes some three inches long; the sepals and petals are bright canary-yellow, the lip purple. It flourishes here in a warm Orchid house suspended from the roof.

RHODODENDRON OLDHAMII.

SCARCELY hardy enough for outdoor culture this Formosan species makes a charming subject for the cold greenhouse and is now in flower. The shoots are slender, densely clothed with long hairs. The leaves, likewise furnished with hairs on both surfaces, are two inches to two-and-a-half inches long and about half as broad, tapered to both ends, the petiole from a quarter-inch to nearly half-an-inch long. The flowers are produced at the ends of the shoots, two or three together; they are open bell-shaped and of a beautiful orange-scarlet colour.

CANTUA BUXIFOLIA.

THIS beautiful Peruvian plant is an old denizen of gardens, having been figured in the *Botanical Magazine* in 1851, t. 4,582. It is certainly one of the most striking of cool greenhouse plants and is admirably adapted for use as a pillar plant, or for training to wires after the manner of many other greenhouse climbers. From the older shoots young growths are produced each summer and these bear the flowers in early spring. When the flowers are over the flowering shoots may be pruned back to the main branches. The plant is nearly hardy and flourishes out-of-doors on a sheltered wall a few miles south of Dublin. The shoots and leaves have a hoary appearance, due to a copious furnishing of whitish hairs. The flowers are produced in a short, leafy raceme or corymb at the ends of the shoots. The corolla tube is long, with five spreading lobes; the latter are rose-pink, while the tube is yellow, heavily streaked with rose. A member of the order Polemoniaceae, to which the garden Phloxes belong, this handsome climber merits increased attention in these days when cool house plants are in greater demand than stove subjects. *J. W. Besant.*

NOTES FROM A WELSH GARDEN.

ALTHOUGH we have had practically no frost since November the garden is more wintry to-day (March 12) than it usually is at this date, the cold, drenching rains, incessant winds and lack of sunshine during the last six weeks having kept most things in subjection. Yet there are a few subjects that are, curiously enough, uncommonly early. These include several of the Erythroniums, of which the lovely butter-yellow E. grandiflorum robustum, growing in a bed of Gaultheria trichophylla, is especially lovely. Another charming species is the yellow and orange E. giganteum (californicum), whilst the pretty little E. revolutum is appearing in quantity about the woodland and rock garden.

Also beneath our old Oaks are cheerful little companies of Chionodoxas, Anemone blanda, and A. Hepatica, especially the white variety—the only one that naturalises freely here. But the most striking sweeps of blue are afforded by groups of Omphalodes cappadocica, O. verna, the Muscari and Anchusa myosotidiflora. The first-named occupies an area of considerable size near the water, and the beautiful clear azure of its large flowers should be just at its best when Magnolia stellata, which stands in the same bed, is covered with its snow-white blooms, the combination being extremely dainty and effective.

The Shortias are among those early flowers of the year to which I have alluded, and the plants have an unusually generous promise of bloom. S. galacifolia of Japan, and S. uniflora of America, though so far removed from one another in a geographical sense, are so much alike that even experts sometimes seem to have a difficulty in telling "t'other from which." Both of these are already showing the chaste Peach-blossom pink of their spring flowers. This wet winter seems to have agreed with them for they have never looked happier. We grow these somewhat fastidious subjects in a deep, well-drained, cool bed, of leaf-mould and sandy loam—mainly the former, and this is, for the most part, collected from beneath Pine trees. Mr. E. C. Buxton, who grows these and other Shortias to perfection, told me of his belief in Pine needles for such plants, and not merely in the form of leaf-mould but as a top-dressing when in a partly decayed condition.

In the rock-garden Morisia hypogaea, which might have been expected to perish, has seldom looked more lively. It is already carrying numbers of its yellow flowers, even the crop of seedlings which surround the parent plants being bright with colour. On the contrary, Saxifraga oppositifolia, which ought to succeed here and which we have been coaxing and wheedling for years, is a sorry spectacle, most forms being dejected, tousled mats of rusty brown. The white variety alone appears to be tolerably satisfied. S. Boydii is admirable, having come through the tempestuous weather without a stain, and no less can be said of that dainty beauty, S. kewensis.

Genista fragrans and Cytisus monspessulanus are already in bloom, the former occupying an exceptionally well-sheltered bank, though it is much hardier than is usually supposed. If the latter has not the grace and the fragrance of G. fragrans it is a Broom that makes a first-rate subject for massing on dry banks. I have never known it to suffer from frost, but it is a shrub that needs replanting every four or five years for, being very leafy, it is apt to become top-heavy, work loose and get blown over. This is a species which is deserving of a much fuller recognition than it now enjoys. C. purgans is also breaking into blossom and here, again, is a Broom that is not appreciated so widely as it deserves to be. Compact in habit, perfectly hardy, deliciously fragrant and with flowers of an uncommonly rich shade of yellow, this fine species (to which we are indebted for the beautiful C. praecox) has few rivals in shrubs of its class.

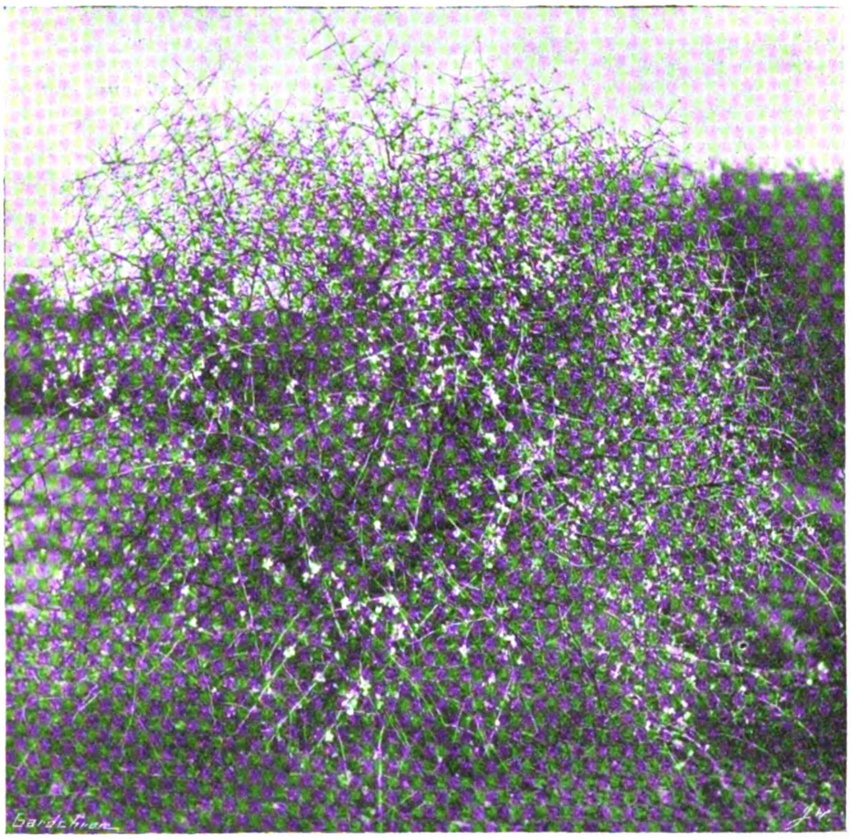

FIG. 81.—PRUNUS DEHISCENS AT GLASNEVIN.

The Heath garden has been gay with the bold masses of Erica carnea and E. darleyensis for many weeks, a brightly-coloured, almost carmine, variety of the former making a very telling foreground to a bank of the double-flowered Gorse. Such tree Heaths as E. lusitanica, E. Veitchii and E. arborea are also at their best just now, and before these and the earlier ones mentioned are out of flower E. mediterranea, which is already showing colour, will be giving its glorious masses of colour and honied scent.

For the first time for many years we shall not have any flowers to speak of on Pieris formosa, quite the finest of the genus that I have seen, though there were plenty of buds a few months ago. But if this beautiful shrub never blossomed at all it would be well worth growing for the sake of the wonderful colour of its spring shoots, which stand up in cockades of glossy leaves in a fiery vermilion. P. japonica, greatly daring, has flowered before its customary date and the earlier and perfectly hardy P. floribunda, is still carrying its mid-winter blooms.

Rhododendrons have thus far escaped frost, but a group of R. praecox, which would have given a beautiful display of bloom, had its prospects blighted by an enemy of another kind, viz., voles. On visiting these shrubs after an absence from home I was amazed to find that nearly every bud had been nipped off (evidently at the opening stage) as cleanly as by a pair of scissors. In fact it was not until I had discovered the collections of nibbled remains in little heaps about the ground that I could believe the mischief to have been committed by rodents. Daily, by twos and threes, the latter are now paying for the loss with the extreme penalty. But, like Sir Herbert Maxwell's rabbits, these pests are so numerous at certain times and seasons that the direst persecution does not seem to mitigate the nuisance.

The most noteworthy of the fragrant, flowering shrubs in bloom at the date of writing are Daphne Blagayana, the old D. pontica—so delightful in woodland—and Osmanthus Delavayi, this last being inexpressibly charming. Though some do not like it I must confess to a certain friendship towards the curiously fresh and pungent odour of the Flowering Currant (Ribes sanguineum) while the white, or pale blush, variety is a pretty object at this season beneath deciduous trees. *A. T. Johnson.*

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SPRING FOLIAGE.

THE glory of Autumn tints in the garden has provided a theme for many able pens, but Spring also has its wonders and unique charms in respect of leaf colouring. The young foliage of many herbaceous plants holds—perhaps for a fleeting period only, but the more precious on that account—tints so subtle and delicate that the finest colours of permanently variegated leaves appear crude by contrast. In the rock garden, as well as in the herbaceous border, spring foliage effects are worthy of more than casual remark.

The Epimediums would merit warm affection, though they gave us nothing more than the inimitable tints of their young, expanding leaves. About half-a-dozen species and varieties possess distinctive foliage characteristics, but all are lovely and as impossible to describe as the elusive colours of shot silk. Both E. macranthum and E. pinnatum reveal exquisite shades of pink such as may sometimes be seen on pearly sea shells, but there are splashes and stains of fawn, bronze, and amber, and the semi-transparency of the shimmering young leaves give transformations with every change of light and movement. One plant growing at the base of a boulder of weathered rock will reveal colours quite different from another plant growing over a carpet of the glaucous Acaena Buchananii, but each will be delightful.

The spring variegation of Galega patula Hartlandii is of a more pronounced character, but the ivory whiteness which is thrown into relief by the apple-green of parts of the stems and leaves is extremely effective in an environment of the average spring greenery. Geranium argenteum is particularly attractive when producing its young, spring foliage; it is as though the silver which is to be the permanent lacquer of the leaves is yet in liquid form, and a phosphorescent radiance encompasses the plant. The folded leaflets and pubescent stalks of other Geraniums, such as G. grandiflorum, G. ibericum, and G. pratense are bathed in rosy hues, and the young leaves of the Heucheras are likewise charmingly tinted. Tiarella cordifolia is never prettier than in spring, and if Mitella diphylla and Tellima grandiflora are grown they should be planted where their spring dress, fresh and glistening, may be fully displayed in the spring sunshine. Teucrium Scorodonia variegatum and maculatum aureum are both delightful foliage plants in spring, and an almost gaudy display of gold is made by the young growths of Valeriana Phu aurea, a plant which admittedly, later in the season, becomes somewhat commonplace in appearance.

However, the latter charge can certainly not be laid against Morina longifolia, which in summer provides a noble display of flower spikes unique in build and colouring, but long before these flowers appear, the fine radiating foliage, formidably but handsomely armoured with prickly spines, imparts something of tropical grandeur to our English flower borders. The Cnicus tribe similarly ornaments the garden with sumptuous spine-clad foliage. C. conspicuus is a capital plant for hot, sun-baked positions, and both C. serrulatus and C. tartaricus spread their foliage handsomely, whilst C. arachnoideus is quaintly interesting by reason of the cobweb filaments stretched from point to point over the foliage. Acanthus spinosissimus is yet another of these fully armed plants, the needle-like spines being white. The well-known Bear's Breach (Acanthus mollis) and its variety latifolius, although plain green, are so nobly handsome that they deserve mention whenever foliage effects are under discussion. Their dignity and beauty were long since recognised by the ancient Greek and Roman sculptors who used them in the decorative schemes of their historic architecture.

Connoisseurs of choice alpine plants will need no introduction to the incomparable Shortias and Schizocodons; the two are here mentioned in unison because the charms of both are so conspicuously akin, so outstandingly distinct from all else, and whilst in spring the successful cultivator enjoys a bewitchingly lovely display of wax-like flowers, the charms of the foliage go on and on, changing as the months flit by. True, these gems demand skilful cultivation, but no plants are more worthy of care.

The "prentice hand" of the beginner in garden craft will be more at ease in handling the handsomely mottled, free and easy growing Pulmonarias. P. officinalis and P. saccharata are most accommodating plants, and in somewhat shaded situations, at the foot of dull, dark-leaved Laurels, along carriage drives, and in confined town gardens, the white and green foliage will create cheery, light effects even before the parti-coloured flowers appear in April or May. Stachys lanata, with its thickly felted leaves is always ornamental, but of white or silvery-leaved plants there are many both for the border and the rock garden.

Since January's departure, the young growths of a good patch of Œnothera missouriensis (still more familiar under the name O. macrocarpa) have gradually increased in height and simultaneously assumed a brighter red, whilst the margins of the slowly unfolding leaves are of a decidedly yellow hue. Thus in a state of utter immaturity, this patch has attracted much attention and elicited many inquiries as to what produces the beautiful colour. When one comes to look around there are quite a few similar instances of attractive colour in very young, undeveloped growths, the Paeonies particularly showing up brightly even at a considerable distance. Soon the Astilbes will produce a very similar effect, although their young leaf-stems are of comparatively slender build. Broad rosettes of foliage issuing from some strong crowns of Meconopsis Wallichii are not only elegantly scalloped and fringed, but are clothed with silken hairs of burnished bronze and golden tints, presenting a picture that would be fully satisfying even though no glorious blooms of crumpled blue satin were lying in store for midsummer. Newly sprouting growths of Polygonum vaccinifolium are delightfully beautiful, and P. affine (P. Brunonis, as it is sometimes called) also yields its quota to the garland of delightful early spring foliage, and from the margins of clumps of Phalaris arundinacea variegata are rising new, clean, almost white blades which are never more pleasing than upon their first appearance.

Among small shrubs, the young growths of Hypericums are of exquisitely dainty shades of colouring, the margins frequently stained with pink, and the green suffused with amber. Veronica salicornoides, V. cupressoides, and V. Hectori are of brighter hue in spring than later, although the richness of their golden tints in autumn deserve no disparagement. Many Barberries, even including the common Mahonia, are as lavish in their decorative young foliage as they are late in autumn with their wondrous varnishing of the mature leaf, while the shrubby Spiraeas are quite pleasing in spring with white and red instead of the normal green leaves,

This article does not pretend to cover the subject of spring foliage effects. It does little beyond calling attention to a garden feature that has not been laboured to the point of superfluity, but which might well be kept in mind when planning a garden or planting a border. The judicious use of white-leaved and glaucous-tinted foliage plants is always calculated to enhance the attractions of a garden, and intermingled with these the plants which have colour in their spring foliage will give a good "curtain-raiser" to the season's panorama of delight. Most of the plants referred to may even yet be planted, preferably from pots, to show something of their spring character, but, of course, the finest effects can only be expected from established and well-developed specimens.
A. J. Macself.

TABLE QUALITY IN JUDGING.

In deciding upon the merits of produce at horticultural shows judges are influenced immeasurably more by external appearances than they are by internal excellences, thus proceeding, in a sense, on a basis of those who estimate the value of a man by the clothes he wears. In the case of plants and flowers no other method can be formulated which will be as satisfactory, but when we pass to the fruits and vegetables a completely different proposition presents itself for consideration and, if possible, solution.

There are not lacking enthusiasts who argue that since the true value of fruits and vegetables lies in their table or food quality no judgment can be accepted as accurate or convincing unless the adjudicators have submitted to them all such products in the condition which they come before us ordinarily for consumption, i.e., dessert fruits raw and culinary fruits and vegetables cooked. This proposal is fascinating in principle, but it seems to be impossible of practical application.

The principle may be accepted unhesitatingly as the correct one in respect of dessert fruits, but it will then be found difficult to apply. There is only one basis on which judgment can be reached, and that is by flavour, and immediately the judges are confronted by the differences in quality which arise from varying cultural conditions and the particular tastes or fancies of individuals, which are often so pronounced as to preclude agreement. Nevertheless, while insisting that all dessert fruits exhibited shall attain to a definite standard of general external excellence, there can be no doubt that finality of choice for honours should be preceded by tasting. Instantly another obstacle to accuracy bulks largely. The judges have to decide in turn the relative merits of exhibits in classes for Cox's Orange Pippin Apple, Doyenné du Comice Pear, a Peach, a Nectarine, white Grapes, black Grapes, and a Melon, and on these there may be an average of four contestants in each class! What will be the value of the palate in estimating flavours when even only three classes out of the lot have come under consideration? The answer is simple—Very little.

Apropos of this point, it is Mr. Peter Veitch who, if memory is stable, tells of meetings of Melon tasters whose mouths were laved with liqueur brandy between bites. There is, without doubt, a subtle attractiveness in this plan which compels its commendation. Two questions, however, arise—Who supplies the liqueur? What will be the state of the judges who, having had fifty exhibits to taste, have suffered (or enjoyed!) forty-nine mouth rinsings? No doubt at the meetings referred to participants were allowed an infinitesimal quantity of brandy on each occasion, and were under a moral obligation not to swallow any, but in these days of grace judges of horticultural shows are no more than human, and fine liqueur brandy is—costly.

If it is admitted that tasting must be done in the case of dessert fruits it is no more than logical to agree that it is equally necessary in the case of culinary fruits and vegetables. Although all the members of a family, whether it is that of the Apple, Plum, Gooseberry, Cabbage, Onion or Potato, have a superficial resemblance to each other, the invisible and immensely important differences within them become apparent when they are cooked and, consequently, if we are to proceed on the lines of the judge-by-flavour enthusiasts everything must be staged ready for the table. It needs no words to urge the absolute impossibility of such a course being adopted. That anything of this nature, even if it were tried, can be little other than a farce is proved by the class, popular at many provincial local shows, which demands a "dish of cooked Potatos." The tubers are invariably cold when the judges come to them; it is extremely rare to see one that is presentable in appearance; and an event which creates profound astonishment to find one specimen really fit to eat. Unwary judges taste these Potatos; wary ones do not.

All things considered it seems that for a time at least, say until the end of the century, judging of fruits and vegetables must proceed on the lines which have proved so generally satisfactory in the past. Let external appearances stand first until two exhibits in the same class are found between which no difference can be discovered or imagined and then let the flavour question come into discussion. Should the fiat go forth that all fruits and vegetables must be staged ready for table exhibition, authorities will save the expense of judges' luncheons, but they will require to have doctors within call, and even then the most competent, the most painstaking and the most conscientious judges will be killed off. *Scrutator.*

TREES AND SHRUBS.

JUGLANS CATHAYENSIS.

This Chinese Walnut, or Butternut, is an interesting and attractive tree, with large, pinnate leaves. Mr. E. H. Wilson describes it as a common bush or tree in Central and Western China. He collected specimens in Western Hupeh and Western Szechuan, and there are herbarium specimens collected by Prof. Augustine Henry, in Yunnan. The first record of the introduction of Juglans cathayensis to Europe is the sending of nuts to M. Vilmorin by Père Farges, in 1899, the trees being planted at Les Barres, France.

For its first introduction to this country we are indebted to Mr. Wilson, he having sent home nuts, collected on Mount Omei, in October 1903, to Messrs. James Veitch and Sons. Plants were raised in the Coombe Wood nursery, and seven or eight years later, when the young trees were only nine to ten feet high, they bore their first fruits.

In a wild state, this Chinese Walnut varies very much in height. At low elevations it is a large bush or small tree, fifteen to thirty feet high. At the other extreme, Mr. Wilson records trees up to seventy feet high, having a trunk girth varying from five to eight feet, with pinnate leaves two feet to three feet long, consisting of eleven to seventeen leaflets, each three inches to seven inches or more in length. Readers can picture the distinctive character of such trees in summer. In winter the unusually thick young shoots are a feature of the Chinese Walnut.

The male flowers are borne on a pendulous, cylindrical catkin up to one foot, or rather more, in length. The fruits (Fig. 82) are egg-shaped, up to nearly two inches long, produced in clusters of four to six or more on a thick stalk, six inches to nine inches long. The nuts are of little edible value, as, owing to the hard endocarp, they are difficult to open.

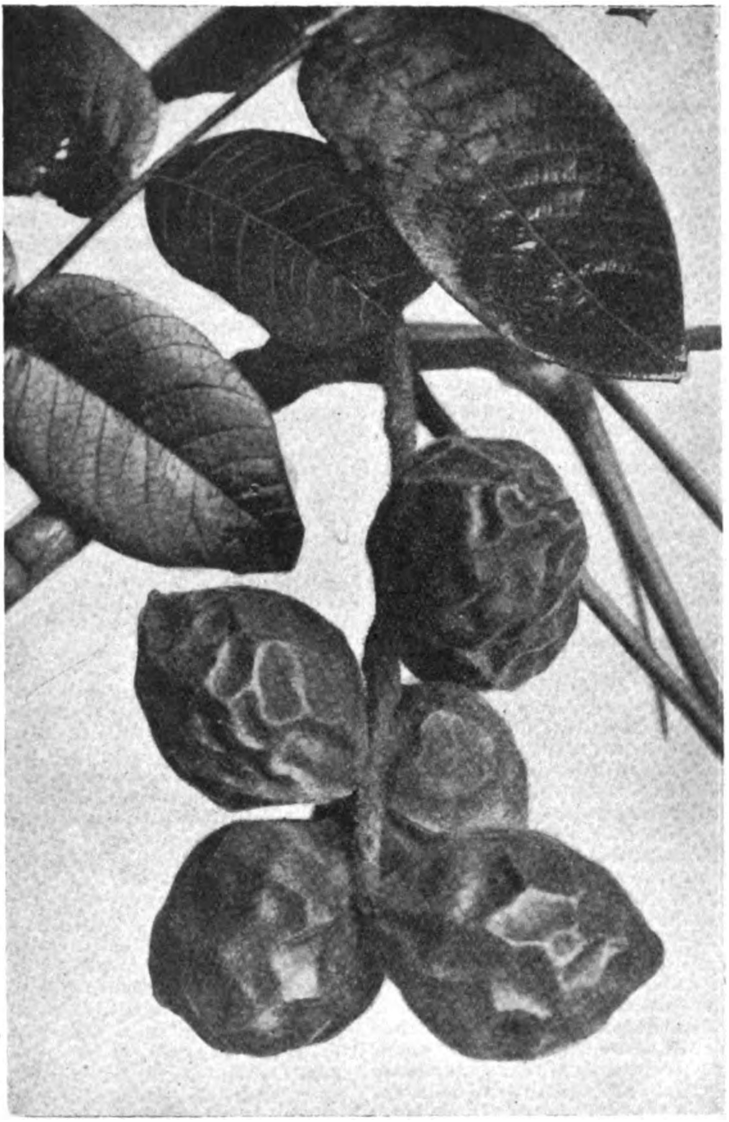

FIG. 82.—JUGLANS CATHAYENSIS.

As a young tree on a lawn, Juglans cathayensis is attractive with its large, pinnate leaves. As it appears to be perfectly hardy, we may confidently hope the Chinese Walnut will prove a useful addition to our exotic trees. *A. Osborn.*

SCIADOPITYS VERTICILLATA.

This interesting tree, one of the handsomest of the Coniferae, and perfectly hardy, is but seldom seen in gardens. It is slow in growth and forms a narrow, pyramidal tree, densely clothed with leaf-like cladodes, dark green in colour with an enamel-like gloss. The leaves are small and insignificant, forming clusters at the base of the cladodes.

Sciadopitys verticillata requires a position sheltered from cold winds, and a moist, well-drained, acid soil.

The variety variegata differs from the type in having some of the leaves a pale yellow colour.

As an interesting departure from the stereotyped in the training and grouping of the Umbrella Pine, the triangular group of this species in the rockery in the Edinburgh Botanic Garden may be instanced. The group is some twelve feet long and resembles a Pine forest in miniature. *Fred. W. Jeffery.*

FLOWERING TREES AND SHRUBS AT WISLEY.

Forty years ago or so, soon after he entered into possession of the land at Wisley, the late Mr. G. F. Wilson planted trees on the right-hand side of the walk that then led from the Common to his Wild Garden, and some of those trees are now in their season among the most pleasing features of the garden. They include five flowering trees that are still scarcely rivalled by any others in our sometimes harsh climate. Each of them has grown into a fine specimen and they are, in the order in which they occur, (1), the common Thorn, a fine standard, beautiful in May or early June, with its cloud of scented flowers, beautiful in autumn with its crop of scarlet fruits, and very noticeable in winter with its intricate tracery of branches against the sky. 2, Prunus Pissardii one of the finest examples of this well-known tree which I have seen. (3), Pyrus floribunda, a very shapely tree with a broad, rounded head, once threatened with death from Monilia but saved by spraying for a year or two, just before the buds burst, with Bordeaux mixture, now showing green. (4) The double form of Prunus Avium, which has had to be restricted (much as one was loth to prune such a tree) lest it jostled too much its dwarfer neighbour. (5) Prunus subhirtella pendula. The last, during the war, "went back" but top dressings of good soil have restored its vigour, and it bids fair to be again, as it was last year, a thing of beauty worth a journey to see.

The reading of a eulogy of Prunus Pissardii in the columns of *The Gardeners' Chronicle* really induced me to write this note, for nothing can be said too greatly in praise of this tree in what I believe to be its original form—the old tree, at Wisley. There are others here not as good, as there are others in many gardens. Your correspondent refers to the variety Blireiana as having semi-double flowers, but the old tree has single flowers and never have I seen a semi-double one upon it. It seems certain that Prunus Pissardii has been raised many times from seeds, and that many of the seedlings fall short of the beauty and character of the original, which may be propagated with fair ease from cuttings. Its green type, Prunus cerasifera, as every nurseryman who has used it as a stock knows well, varies considerably from seeds, and the many trees here, which since the end of January have been sheeted with blossoms, show a good deal of variation in the flower, especially in the breadth of the petals; but in this character the old Prunus Pissardii surpasses them all, giving a round, saucer-shaped flower with the deep pink of its sepals shining through the white corolla—very pleasant to see. Some of the seedlings give semi-double flowers and P. Blireiana and P. Moseri are excellent. Some have dull foliage and some bright in spring and the latter are the better worth preservation and they are therein like their original parent.

Your correspondent (p. 147) refers to the likeness in flowering between Prunus cerasifera var. atro-purpurea and P. Mume, and this is interesting, for the latter was put into commerce as a variety of "P. Myrobalana," a synonym of P. cerasifera, although, indeed, it is an Apricot and only distantly related to the Cherry Plum.

May I turn to a remark in another part of the same issue of *Gard. Chron.*, where a reviewer expresses his belief that with sufficient moisture Cistuses are more hardy! Will he expand this statement please. It may be that "wet" is used by him in a special sense, for while I must confess that I have never attempted to grow a Cistus in a bog or on the wet margin of a pond, yet their structure and appearance seem to say that well-drained and even dry situations are those they love. Certainly at Wisley, where there are plants of Cistus laurifolius which were old when the Society came here twenty-one years ago, they are in a dry spot, and so is Cistus corbariensis, planted in 1911 (it came safely through 1917 without protection), perched on a knoll of the rock-garden and of such large proportions that its very vigour will, I fear, condemn it. *F. J. Chittenden.*

PRUNUS PISSARDII.

The Purple-leaved Plum is too well known for its beautiful foliage during summer and autumn to require any recommendation on that account, but as it is an early-flowering tree it deserves more attention. It is now (middle of February) one of the most attractive of our trees, and a group from twenty to thirty feet in height covered with their fairy-like white flowers, with pinks stamens and ruddy buds, backed by a plantation of Cupressus macrocarpa discovers an altogether new beauty in an old friend. The young leaves are just pushing out from their sheaths, and their bronze-green tints harmonise perfectly with the blossoms, but are not sufficiently advanced to hide them, and thus the whole makes a charming picture that only requires to be seen to be admired. During some seasons bullfinches severely thin the flower-buds, but this year, perhaps owing to the mildness of the winter, they appear to have left them alone, with the result that the trees are earlier and more freely flowered than usual. *A. T. Harrison, Culzean Castle Gardens.*

A SELECTION OF AMERICAN WILLOWS.

During my long stay at the Arnold Arboretum, from May, 1915, to September, 1919, I had a good opportunity to examine the Willows of Eastern Asia[*], and Professor C. S. Sargent induced me, too, to make a study of the American species and varieties of this rather difficult genus. The results of my investigation I set forth in a series of articles[†], and from the observations I made I am convinced that there are among the American Willows a great many valuable and hardy species of which hitherto only a few have been introduced into gardens of Great Britain and the European Continent.

In this article I wish to draw the attention of amateurs and gardeners to these American Willows. Some have already been in cultivation with us for quite a long time, and they are mentioned by Mr. W. J. Bean in his excellent book, as for instance Salix adenophylla, S. Bebbiana, S. candida, S. cordata, S. discolor, S. lasiandra, S. lucida, S. nigra, and S. petiolaris. There are, however, many other species which are well worth planting in our gardens and parks. I shall deal with them according to their systematic position, beginning with the rather natural group of the Pleonandrae, including the four sections Nigrae, Triandrae, Pentandrae (subsect. Lucidae), and Bonplandianae. Besides the number of three or more stamens, another peculiar character these groups have in common are the pale deciduous flower bracts of both the male and female flowers.

Among the Nigrae which form a significant section that is clearly defined from the other sections in the New World and has no affinity whatever to any group of the Old World, the typical Black Willow, Salix nigra, has been known in Europe since 1811. It is an eastern species represented in the west by S. Goodingii, a Willow frequently met with in California. Both are tree Willows in their native country, but with us S. nigra has, according to Bean and my own observations, rather the aspect of a small, densely-branched S. alba which of course otherwise is entirely different. S. Humboldtiana is the South American representative of this group, and probably only hardy in the warmest parts of western England and the Atlantic coast of Europe. S. Humboldtiana var. fastigiata seems to be a striking form sometimes planted in South American gardens.

Of the well known section Triandrae (or Amygdalinae), S. amygdaloides is a handsome, hardy, northern species which, to my knowledge, is still wanting in European gardens. It becomes a higher tree than our Almond-leaved Willow, and has thin, broadly-lanceolate leaves of a bright shining green on the upper side and a glaucous hue beneath.

Of the Pentandrae section the species of the New World form the distinct sub-section Lucidae, although S. serissima may, perhaps, be more correctly referred to the true Pentandrae. This species is one of the most interesting tree Willows, and was often confused with S. lucida or S. amygdaloides, until its characteristic features were recognised by L. H. Bailey, the editor of the great *Standard Cyclopedia of Horticulture*—in which, by the way, the Willows are rather badly treated—and later with more preciseness by M. L. Fernald, the excellent botanist, whose knowledge of the flora of North-eastern America is unrivalled. Unfortunately he did not pay attention to the forms described by the Swedish monographer Anderson in 1858 and 1867, who was the first to deal with the American Willows in a thorough manner. Anderson's S. pallescens (that has nothing to do with S. pallescens of Schleicher, which is a *nomen nudum*) is probably the same as S. serissima. Unfortunately I have not been able to examine the type specimen collected by Bourgeau on the Saskatchewan. It seems to be lost. Nevertheless, S. serissima should be planted in our gardens. It is easily distinguished from the well-known S. lucida by its elliptic-lanceolate—not acuminate—leaves, which are glaucescent beneath, and especially by its late flowers and the very late ripening fruits, which can be seen on the plant until August.

S. lucida is an eastern species which was introduced to Europe long ago and is easily recognised by its rather abruptly long, acuminate leaves, which are very glossy above and also pale green, not glaucous, beneath. Its western congener, S. lasiandra, has however glaucescent leaves at least in its typical form that is often called S. Lyallii by American florists. It is well worth planting in our gardens, and certainly much more handsome than its var. caudata (S. caudata), which sometimes is regarded as the type of Bentham's S. lasiandra. This variety is rather well distinguished from typical S. lasianda, and it may be that a good many intermediate forms are of hybrid origin. The forms of S. lasiandra ought to be introduced so that we may study them in our gardens.

The collection of native Willows in the Arnold Arboretum was a rather small one while I was there, but since then the Willows have been moved to a place more convenient for them, and I hope they can now be studied successfully at this classical place.

Another section of the Pleonandrae group restricted to the New World is the Bonplandianae, of which Ward's Willow, S. longipes var. Wardii (S. Wardii), a common species of Missouri and Arkansas, was found by Ward near Washington, the most northern point of its distribution. It is the hardiest form of a very variable south-eastern species, and ought to be perfectly hardy even in Central Europe, while the Californian S. laevigata, its western, counterpart, probably needs the warmest parts of England to be a success in the open. It sometimes becomes a rather large tree.

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[*] The Willows of Eastern Asia, Sargent, in *Plantae Wilsonae*. III. 40-179 (1916).

[†] A conspectus of Mexican, West Indian, Central and South American species and varieties of Salix, in *Bot. Gaz.* LXV. 1-41 (1918).—I. The species related to Salix artica Pall., l.c. LXVI. 117-142 (1918).—II. The species related to Salix glauca, l.c. 318-353 (1918).—III. A conspectus of American species of sections Herbaceae, Ovalifoliae and Glaucae, l.c. LXVII., 27-64 (1919).—IV, The species and varieties of section Longifoliae l.c. 309-346 (1919).—V. The species of the Pleonandrae Group, in *Journal of the Arn. Arboretum* I. 1-32 (1919).—VI. a. The species of the section Phylicifoliae. b. The species of section Sitchenses, l.c. 67-97 (1919).—VII. a. The species of the section Adenophyllae. b. Sect. Balsamiferae, l.c. 147-171 (1920).—VIII. a. The species of the section Chrysanthae. b. Sect. Candidae Schneider, l.c. 211-932 (1920).—IX. a. The species of the section Discolores. b. The species of the section Griseae, l.c. II. 1-25 (1920). X. a. The species of the section Fulvae. b. The species of the section Roseae, l.c. 65-90 (1920). XI. a. Some remarks on the species of Section Cordatae. b. Some remarks on the geographical distribution of the American Willows, l.c. 185-204 (1921).—XII. a. A systematic enumeration of the sections, species, varieties and forms of American Willows. b. Some remarks on the hybrids hitherto observed among the American Willows. c. Analytical keys to the species of American Willows. Index, l. c. III. 61-125 (1921).

The next section, Longifoliae, I have to deal with is one of the most interesting of the New World. It occupies an isolated position in every respect, belonging to the Diandrae group. Probably the European-Asiatic section Albae not represented in America may be most closely related genetically to the Longifoliae. The type species S. longifolia (S. interior) is a widespread Willow of the central and north-eastern United States and eastern Canada. It is found as far south as the mouth of the Mississippi in Louisiana, and the northern limit of its range is the Upper Mackenzie region in the North-west Territories. The northern forms, which I refer to var. pedicellata (S. linearifolia), are of course quite hardy even in the colder parts of Central Europe. S. longifolia is not mentioned by Bean, but I have seen it several times in European collections. It is often named S. fluviatilis, but this is quite a different western species of the same section. This is the same as the so-called longifolia var. argyrophylla, a western form belonging to S. exigua. The typical S. longifolia sometimes becomes a tree up to twenty metres high. Its linear leaves resemble those of S. nigra, but they show a very different, laxer nervation and a distinct, rather distant, spinulose-toothing, while the leaves of the Black Willow have a much denser denticulation and reticulation. In both species the flowering aments appear rather late on leafy branchlets. The most interesting species of this group from a horticultural point of view are the typical S. sessilifolia from Washington and British Columbia, and the closely related S. argophylla, Nuttall (not of other authors), from Washington and Oregon. S. exigua, too, a widely spread western species of extreme variability, and the Californian S. melanopsis var. Bolanderiana should be introduced and tried in our gardens. Occasionally S. sessilifolia becomes a small tree, otherwise these species are shrubby. Like the Pleonandrae the Longifoliae possess two glands in the female flowers, and both the male and female flowers have one-coloured light yellowish deciduous bracts. *Camillo Schneider.*

(*To be continued*).

FOREIGN CORRESPONDENCE.

TREE SURGERY.

Is "tree surgery," as we term it in America, much practised by English horticulturists and foresters? The publishers of my book, *Practical Tree Repair,* which has to do with the physical repair of trees, bracing weak limbs, and the treatment of wounds and cavities, have asked me to prepare a revised edition. For that purpose I am anxious to know the results of English experience.

The work is new and the only way to judge the value of the various methods of treating decaying trees is to collect data as to their results. Such observations can only be made years after the work has been done and usually only when, by accident or otherwise, there is an opportunity to cut the tree up and actually determine whether the operation prevented the spread of decay.

One aspect of tree protection which American arboriculturists have studied carefully and in respect to which they have changed many of their old practices, is the choice of materials for painting the bark wounds and pruning-cuts to prevent the entrance of decay-producing fungi.

I have found Mr. A. D. Webster's book of great interest and hope that other English experimenters in this field will make available their methods and opinions. I should be very glad to receive letters from those who have had experience in this form of tree work, addressed to me at 683, Lakeview Road, Cleveland, Ohio, U.S.A. *Elbert Peets.*

NOTICES OF BOOKS.

Modern Garden Problems.

The Austrian Horticultural Society, which has its headquarters in Vienna, is, in common with other similar German and Austrian societies, in the habit of holding periodical "Gardening Days," or, as we should call them, "Horticultural Congresses," in which the more serious part of the business is enlivened by excursions to nurseries or botanic gardens.

An account of the proceedings and the papers read at the congress held in September, 1924, has been printed and made up into a booklet* with the title, "Moderne Probleme im Gartenbau" (Modern Gardening Problems). The various papers read contained much matter of interest to gardeners; among others may be mentioned the one read by the general secretary, Herr Fritz Kratochwjle, on the history of the society. It appears to have been founded about the year 1827, and to have experienced varying fortune; in 1861 the committee felt itself sufficiently confident to erect a huge building in the Parkring (Vienna) as the headquarters of the society. This project, however, proved a crippling financial burden, for the money, or a great part of it, had to be borrowed on mortgage, and many years later part of the ground was sold, the building pulled down, and another erected of a more suitable size. Unfortunately, the great war found these activities still uncompleted, and the society was once again plunged into difficulties even greater than before. It is only now recovering from the effects, not only of the war itself, but of the after consequences—collapse of the krone, etc.—and it was only in 1922 that the *Journal* of the society, which had been published for the past fifty years, had to suspend publication. It has now, however, recommenced to appear, and, under a strong and energetic committee and a capable general secretary, the society is slowly regaining its past vigour. A paper by Herr F. J. Böhm dealt exhaustively with the subject of tariff scales for nursery produce, a subject of interest to all present who were market growers.

The booklet is well printed on good paper, with a coloured cover, and will form a souvenir of the occasion to those who attended the congress.

The Four Gardens.†

Though not a gardening book in the accepted sense of the term, this delightful little volume breathes the delights and glories of old-world gardens and old-fashioned flowers. Apparently it is correct when writing unorthodox gardening books to use the poor gardener as a foil for fine phrases, and yet old John of the haunted garden is not so ignorant after all, for although his speech be uncouth his utterances are knowledgeable; "sow dry and plant wet" is good advice. A list of flowers that open and close at certain times of the day, given on p. 75, in "The old-fashioned garden" would suffice to make a floral clock. "The poor man's garden" is a piece of fine writing and shows how country folk love flowers, for "the poor man also owns the wild garden of all the countryside" and as a child knew where every sort of wild flower grew.

The "rich man's garden" has as its theme a simple child who longed for red Daisies, loved to show convalescents from the Home the glories of the place, did much good in making people happy, and who was the only person who really understood the rich owner of the estate.

HARDY FRUIT GARDEN.

FOUR GOOD-FLAVOURED APPLES FOR FEBRUARY AND MARCH.

Although the majority of the finest-flavoured Apples are in season from August to January, there are quite a number of good flavour which will furnish a supply for the remainder of the season. The selection is by no means large nor is the flavour quite so good as is to be found in certain varieties in season from October to January. There is, in fact, room for more really good late Apples.

With the aid of an ordinarily good fruit store, there is no difficulty in bringing these varieties to perfection during the months mentioned. One important point to be observed with these late Apples is that the fruits should be allowed to remain on the tree so long as is reasonably possible. Lord Burghley and Cockle's Pippin present no difficulty in this respect, as they hang quite well until the end of October.

The four of which I propose to give brief descriptions are very useful for the months of February and March. The notes regarding their growth and cropping are made from observation on trained bushes of these varieties growing on light soil at Wisley.

Cockle's Pippin: Of rather weak growth, and only a fair cropper. Fruit small to medium, round, conical, regular, greenish-yellow, faintly russetted; flesh yellow, crisp and sweet.

Lord Burghley: Of moderate growth, and a good cropper. Fruit small to medium, irregular, round-conical, pale greenish-yellow, with a dull red flush on the side exposed to the sun; skin slightly greasy; flesh yellow, juicy, and sweet.

Duke of Devonshire: Of moderate to fairly strong growth, and a good cropper. Fruit small to medium, round, flattish, dull yellow, and almost covered with russet; flesh pale yellow, firm but inclined to be rather dry.

Lord Hindlip: Of moderate growth, and a fair cropper. Fruit of medium size, conical, nearly covered with a crimson flush and stripes, and netted russet patches. Flesh white, crisp and juicy, but of a softer texture than the preceding three.

Lord Burghley is, in my opinion, the best of the four sorts and should be included in every collection, being indispensable for this period of the year. *J. Wilson, Wisley.*

WINTER MANURING OF FRUIT TREES.

Gardeners should remember that different kinds of manures have different effects on fruit trees. For instance, applications of nitrogenous manures tend to promote leaf and wood growth; potash assists in the formation of the fruit buds and fruit spurs; whilst phosphates help to strengthen the blossom and aids in the formation of fine fruits.

A dressing of lime is often of very great importance, especially in the case of stone fruits. Lime renders latent plant-foods available to the crops, and is valuable in sweetening the soil.

Top dressings of organic manures are always beneficial to fruit trees but their application is not to be advocated in winter, but rather bone meal, basic slag and a potash fertiliser. For Apples, Pears and Plums a good winter dressing to each square yard of surface consists of two ounces of basic slag, one ounce of sulphate of potash and one ounce of nitrate of soda. The lime may be applied earlier or later. Should the trees be more than fifteen years old a slightly stronger dressing than that recommended may be used. At the end of march or early April another dressing of nitrate of soda at the rate of one to two ounces per square yard may be given. *Pomona.*

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* *Moderne Probleme im Gartenbau.* Verhandlungen der Allgemeinen Oesterreichischen Gartenbautagung, 1924. Wien, Verlag der Oesterreichischen Gartenbau-Gesellschaft in Wien.

† *The Four Gardens.* By Handasyde; a new and revised edition with four illustrations in colour by Mary G. W. Wilson. London, G. T. Foulis and Co., Ltd. Price 3s. 6d. net.

MELONS IN UNHEATED PITS.

We have grown Melons successfully in unheated pits in these gardens without the use of hot-beds, during the past ten years. The first batch of seeds is sown the first week in April in small, sixty-sized pots filled with good loam that has been passed through a half-inch sieve and mixed with a little wood-ash and sufficient mortar rubble to render it porous. The soil should be placed in a warm house the day before using it, so that it becomes warmed through. The pots should also be got ready, placing one piece of crock over the drainage hole, and filling up to the rim with the soil. Make one hole, or two if the seed is of doubtful germination, with a small stick or lead pencil, an inch deep, and place one seed in each hole. Then with a gentle shake the seed will be covered and the pots may be placed in a box containing plunging material, such as Sphagnum Moss. Place a square of glass over the box, and put the latter in the warmest part of a house where the temperature will not fall below 55°; if a little warmer the seeds will germinate sooner. When the seedlings appear gradually remove the glass and, after a day or two, take them out of the box, and afterwards put them on a shelf near the roof-glass. If the weather is cold do not hurry to put them on the shelf for a few days. Keep them growing actively, repotting them as becomes necessary until they are in 32-sized pots. The soil for this potting should consist of loam, wood ash, and mortar rubble, used in a rougher condition than at the first potting.

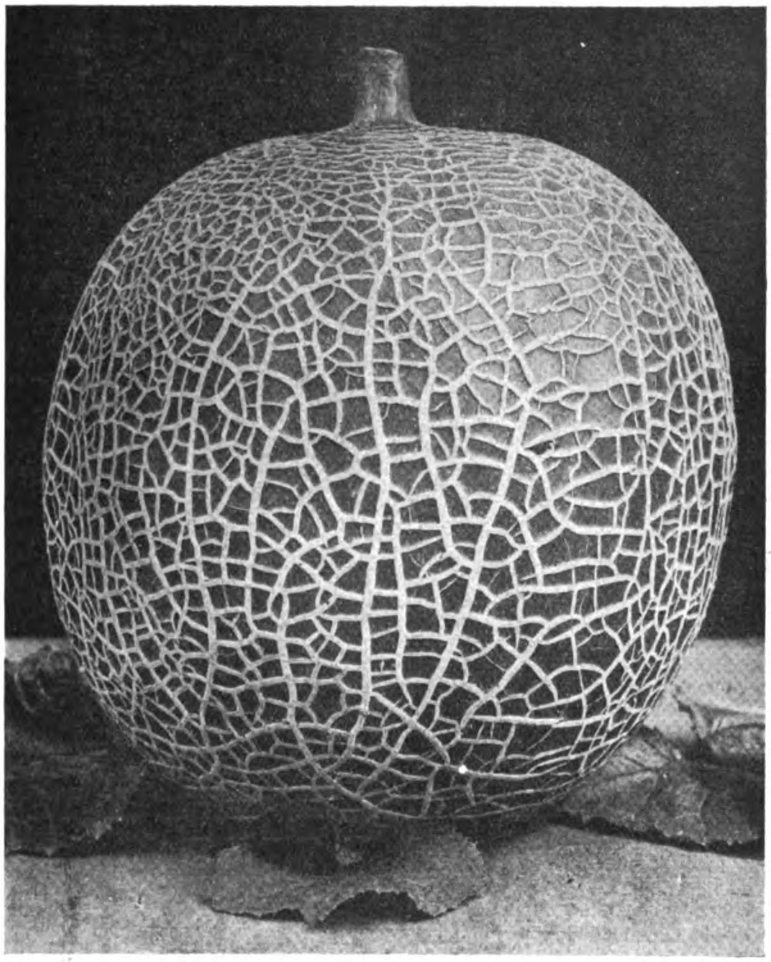

FIG. 83.—MELON HERO OF LOCKINGE.

During the first week in May or the early part of the second week of that month the Melons should be planted in the pits, selecting a warm afternoon for the operation.

Before planting, the pits should be made clean and tidy and the walls whitewashed. The old soil in the pits need not be removed; if a little too much, take away what is needed to allow a little mound to be made in the centre of the light, using one-and-a-half barrow load of soil. The compost should consist of six barrow loads of loam, one of wood-ash, and two-thirds of a barrow load of mortar rubble, the whole well mixed together. This quantity will suffice for four lights.

In planting, I place the Melons a little on their sides, well water them in, and make them firm by pressing the soil around them. They are kept shaded for a few days after planting. The time of closing the pit is from three p.m. to four p.m. by the sun, according to the weather. The pit is covered at night with one thickness of canvas, put in position one hour before sunset; this conserves the heat for the night.

So soon as the leading growths are about fifteen inches long, pinch out the tips to encourage the development of lateral growths. The plants make quick growth at this stage and soon develop young fruits. Take the opportunity of a fine afternoon to pollinate the flowers, and so soon as the fruits are large enough, select the best two or three and remove all the others. When the Melons have grown to the size of a hen's egg, I commence feeding the roots lightly increasing the strength as the fruits swell. No artificial manure is used, but mostly farm manure, and the feeding is continued until the fruits are well advanced in netting, when the stimulants are withheld gradually.

I commence cutting ripe fruit at the end of July or the first week in August.

The second batch of seeds is sown at the end of April and the plants treated in the same way as the earlier ones. Before planting these, I wait until the early crop of Potatos is lifted from the pits, this being completed by the beginning of June, and the Melons are planted at once.

When planting Melons, place a little fine charcoal around the stems as this prevents the plants from damping off, which is liable to occur through watering too near the stem.

The following varieties respond well to this method of treatment;—Hero of Lockinge (Fig. 83), Universal, Sutton's Scarlet, Sutton's A1, and Superlative. The paler skinned varieties, such as Ringleader and Royal Jubilee are not so suitable. *E. Neal, Tilgate Gardens, Crawley, Sussex.*

FRUIT REGISTER.

DESSERT APPLES.

The best early Apple is Beauty of Bath, followed by Lady Sudeley, and St. Everard, which is much appreciated, having nearly a full flavour of Cox's Orange Pippin. Worcester Pearmain is not of much merit, owing to its thick skin, and Wealthy will probably take its place, this Apple being juicy, of good flavour, and with a thin skin. Small fruits of James Grieve and Charles Ross are useful for dessert purposes, whilst American Mother still holds its own as a full-flavoured and good keeping variety.

Small fruits of Blenheim Pippin (the best all-round variety) are very palatable. King of the Pippins is a disappointing Apple except for appearance, and is of poor flavour. Ribston Pippin does well as a cordon tree, and is a prolific bearer.

Rival is one of our best early winter varieties, the fruit being of medium size, bright in colour, and of good flavour.

Last summer being nearly sunless, several varieties did not ripen well. Fruits of Cox's Orange Pippin were very small and scarce. King of Tomkins' County was the same, yet in a good season this is one of the best dessert Apples. The fruits are usually very large, but those of a medium size may be graded out for the dessert table. The variety Lord Hindlip gave us a good crop last year, and evidently likes a wet season. This was one of our best sorts. Lord Burghley did not like the dull season, but it is a good variety in an ordinary summer. Other good varieties cultivated here are Christmas Pearmain and Adams's Pearmain.

The Russet Apples, especially Rosemary Russet, always give good returns, and the fruits keep well. The wet, sunless summer did not suit Sturmer Pippin; we had a heavy crop of this variety, but the fruits failed to ripen, although the crop was well thinned. This is one of our best late varieties in an ordinary season. Most of our trees of this sort are grown as cordons and espaliers.

The Houblon is a useful variety, as is Ellison's Orange, which is earlier than Cox's Orange Pippin, and a good, clean grower.

Several other late varieties are grown, as Apples are in demand here until April.

I am sending you some fruits of the variety Radford Beauty (see Fig. 84). Perhaps it is not of first-class flavour, but it is an excellent keeper and surpasses a good many catalogued varieties. It is much appreciated here, owing to its firm flesh and good colour. The fruits are from standard trees which never fail to give a good crop of medium-sized fruits, and make good, clean growth. *A. B. Wadds, Englefield Gardens, Reading.*

LOCAL PLUMS.

THE article by Mr. H. W. Stenning, on page 81, interested me very much, because I have been for a long time acquainted with the Yellow Pershore Egg Plum as they call it in the market, and I can fully endorse all the good things your correspondent writes about it. I would further emphasize its dual purpose value, because there are two seasons for Pershore, the first when the Plums are green—and I question whether there is so much fruit of any other variety marketed in a green state—and the second when the Plums are ripe and good for cooking, jam-making, and bottling. I do not wonder that the Worcestershire fruit growers think a lot of their Pershore Plum, because it has probably done more than anything else to give Worcestershire the reputation it enjoys as a fruit-producing county. In other words, if nature had never brought this Plum into being and endowed it with a wonderful capacity for reproducing itself by means of suckers, it is not unlikely that fruit growing would never have developed to the extent it has in the far-famed Vale of Evesham and the adjoining districts.

The vitality of the Yellow Pershore is remarkable, and as Mr. Stenning rightly states it seems to thrive under persecution. In 1923 I saw acres of Pershore Plums with the leaves so brown and shrivelled through the ravages of aphis that it seemed impossible they could recover, but they did, and last year they came out as green and vigorous as ever, though, as one might have expected, their fruiting powers were affected for the season, but I am looking for a big crop of Pershore Plums this season.

Mr. Stenning wonders why the Pershore Plum is not seen more frequently outside Worcestershire, and the reason is, I think, because most stone fruit growing districts have a local Plum of their own. For instance, while the Pershore Plum flourishes on the banks of the Severn, in Worcestershire, at another point nearer the mouth of the river, a distinct local Plum has the monopoly, namely the Blaisdon Red, named after the little village where it originated. By a mere accident of nature—I can call it nothing else—the Blaisdon Red appeared, almost within the memory of old men still living, and it has added wealth to the whole district round the place where it originated.

The Blaisdon Red has very little in common with the Pershore, for while both sorts come in at the same season and are about the same size, one is red and the other yellow, and Blaisdon Red Plums are never picked green, though when they change colour they are excellent for cooking, preserving and bottling. In the habit of growth these two Plums are entirely different, for while the Pershore grows best under cultivation, but even then never makes a big tree, the Blaisdon Red is a grass-orchard Plum with a habit more like a forest tree. In fact, on the alluvial soil by the Severn side there are some giant specimens of this variety, and more than once I have seen upwards of half a ton of fruit picked from one specimen. Frequently the trees grow too tall for the long picking ladders, but the growers make no trouble about this, they simply break the long branches half way through and leave them hanging down. The breaking does not kill the boughs, though it is generally done at picking time, and the following season there will be more Plums on the broken branches. I have on a few rare occasions seen a Blaisdon tree affected with silver-leaf, but the trouble does not seem to spread and, like the Pershore, it is practically free from disease.

There is no difficulty whatever about propagating the Blaisdon Red, because if trees are planted in an orchard, and live stock is kept out, the ground beneath the trees will soon be a forest of suckers. It is the sheep grazing in the Plum orchards that keep down the suckers. In the orchard of a man who does quite a good business in selling trees—which cost him nothing to propagate—I saw thousands of suckers in all sizes from the thickness of a lead pencil to trees big enough to transplant. The original trees planted in the orchard produce good crops of fruit, and to produce young stock for sale all that the grower does is to keep grazing animals out of the orchard. In view of what I have stated it is not surprising that the men in the Blaisdon country consider their Plums to be far superior to the Pershore, and naturally enough the Worcestershire growers do not agree.

In the same district where the Blaisdon Red grows on the banks of the Severn there is another valuable fruit, half Plum and half Damson, which carries a bloom as thick as that of a Gros Colmar Grape. No one knows its origin; it is part of the history of that part of the vale where it grows and is known locally as the Prune,—or "Prewin" as the natives put it—and the Violet. This local variety is a delicious fruit, and last year the good crop made high prices in the market. In sequence of ripening the Prune follows Early Prolific and comes in before the bulk of the Blaisdons are ready for handling. Nobody propagates the trees, they simply spring up in the hedgerows and corners of orchards, and they either remain in the place where they appear until they eventually bear fruit, or are dug up and planted in the orchards round the homesteads. The Violet, curiously enough, is confined to quite a limited area, and despite its prolific nature and commercial value it does not appear to have been planted much outside the district where it originated.

In these days of commercialism when one hears so much about the influence of stocks the story of these local Plums is extremely interesting, demonstrating as it does how, by mere accidents of nature, big local industries in fruit growing have sprung up. Also how great results hang in the beginning on slender threads, because if the first Yellow Pershore or Blaisdon Red tree had been destroyed in infancy, as they might have been, the output of Plums in Worcestershire and Gloucestershire would have been vastly different from what it is at the present time. *G. H. Hollingworth.*

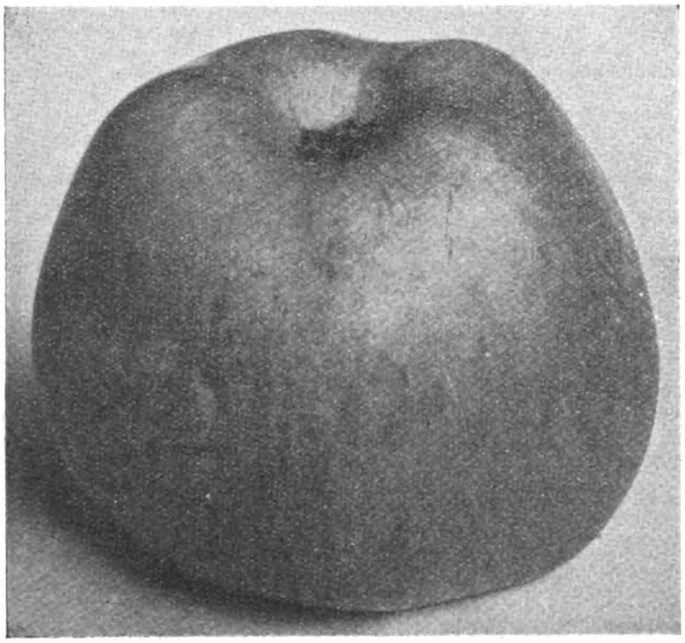

FIG. 84.—APPLE RADFORD BEAUTY.

POTATO BREEDING.

THE breeding of the Potato with the object of obtaining new varieties is a subject of great interest. There arises a period in the history of a plant when progress seems to be impossible, and, I hold, that this time has now arisen in regard to the Potato. This may be considered heretical in some quarters. The article by Mr. Thos. P. Mc'Intosh (pp. 114 et cit.) presents the aspect of the case from the scientific standpoint. I propose to give what I believe to be the practical side of this matter.

After an experience of thirty years, I am convinced that little more can be done in improving upon certain types of the Potato that are now in commerce. Let us take a variety as a standard. If a breeder, for example, selects Great Scot as a variety to be improved upon, and if he sets out to attempt to accomplish this, what is the result? Does he, cross as he will with the other sorts at his command, effect any improvement? In short, does he produce an improved variety? I think it is next door to impossible. Take all the introductions of the last decade. There are hundreds of them in the official trials in England and Scotland. How many have survived? What are the plant-breeding stations doing? I think the gentlemen who control these are finding that Potato-breeding is now a somewhat difficult proposition.

What is the reason for a definite statement of this character? The explanation appears to be a very simple one. The Potato stands at present in regard to improvement in the same position as the Sweet Pea, and it will remain there until some new blood is found that will break up the vicious circle into which raisers have been forced by nature. This can only be done by the discovery of some species of Solanum, or something allied to it, which will breed with the modern Potato or any of its ancestors.

There was a time in the history of the Rose when the old raisers of Hybrid Perpetuals were simply producing replicas of varieties already in commerce. This circle was broken up by introducing the blood of the Teas, and we soon had a new race in the Hybrid Teas. The Hybrid Teas were a fresh and welcome break. But how is such a new break to be obtained in either the Potato or the Sweet Pea? The problem for the breeder is to find fresh blood somewhere. Can, in-so-far as Potatos are concerned, Mr. Mc'Intosh suggest how it is to be done? The breeder of the Fancy Pansy and the Viola is in the same position. The new sorts of these flowers, so far as I can judge, are no better than the old favourites.

The Boards of Agriculture of England and Scotland complain every season that old Potatos, under new names, are sent to their trials. These may be genuine seedlings and these seedlings seem to suggest that further progress along present lines is impossible.

Mr. Mc'Intosh states that "bud sports" have been recorded—I would here interpolate that there is no doubt on this point—as occurring in the Potato, but from the standpoint of the systematic production of new types, their occurence is too rare. He admits that selection of tubers from high-yielding plants does not seem to be efficacious for the purpose of improving healthy stocks, and that sexual reproduction affords the only means of progress towards greater yielding capacity, increased disease resistance, hardiness, and general utility. Sexual reproduction did all these things at one time, but that day has gone. It can only return when fresh blood is found elsewhere which will rejuvenate modern strains of Potatos. Sexual reproduction leads nowhere to-day.

Mr. Mc'Intosh refers to a "bolter." I wish he had defined the term. At the present time a "bolter" is a factor in the evolution of the Potato that deserves every investigation. It is a distinct departure from the type, and in many cases it is a decided improvement. The "bolter" from Great Scot is an example. Can science explain what a "bolter" is? I should like to know the ideas of some of the cognoscenti on this point. If we consider first-early varieties of the Potato the position in regard to them is even more hopeless than that of the second-early and maincrop sorts. In order to be early a Potato must naturally be a weakling, and the earlier it is the weaker its constitution. What hope has such a variety to-day in standing up against the leaf diseases that are common to the Potato now? Does science favour the selection of a "bolter" in the early types in order to improve the stock? *George M. Taylor, Edinburgh.*

VEGETABLE GARDEN.

BRUSSELS SPROUTS.

THERE is no more useful member of the Brassica family than the Brussels Sprout, which yields produce in the winter when other vegetables are more or less scarce. One of its greatest assets is its hardiness, no amount of frost seeming to do it much harm. The sprouts growing up the stem are well protected by the large, spreading growth on the top, which should not be cut off until all the sprouts are gathered. Where a regular supply of green vegetables has to be produced all the winter, a good breadth of Brussels Sprouts should always be cultivated.

The seeds should be sown early in March in a frame on a mild hot-bed, in fine soil which has been saved from the potting shed and mixed with sifted loam. Sow thinly, and water the seeds with a fine rosed can after covering them with about a quarter-of-an-inch of fine soil. Keep the frame closed and lightly shaded until the seeds germinate, then remove the covering, and admit air on all favourable occasions, the object being to keep the young plants as sturdy as possible. So soon as the plants have made two rough leaves they should be pricked out carefully into nursery beds in the garden, placing them about four inches apart. The beds should be about four feet wide, with nine inch boards placed down each side edgeways. Across these nail at intervals laths to carry tiffany or old fish-nets to afford the seedlings protection from birds or late frosts. When finished, water the young plants in and leave the covering on for a day or so until they have become established.

Most growers have their favourite varieties, but it is interesting to grow more than one sort, as they can be compared with one another when cropping. Each variety should, therefore, be correctly labelled.

By this date a site will have been selected on which to grow them. Like all Brassicas, Brussels Sprouts need a fairly strong soil, which should have been dug deeply in the autumn, but not over-manured, or the sprouts will be large and coarse, more especially if the winter proves mild.

In planting allow plenty of room between the rows; in these gardens the rows are made about five feet apart and early or mid-season Potatos grown between them. When the tubers are dug the soil is drawn up to the stems of the Brussels Sprouts to keep them firm at the roots. If the grower does not wish to plant another crop between them, Brussels Sprouts may be placed a yard apart, and a distance of two feet or thirty inches allowed between each plant, according to the variety. Plant each seedling by means of a trowel, making the soil firm about them, and water each row as it is completed. When the bed is fully planted stir the soil with the Dutch hoe, and repeat this hoeing at intervals to promote healthy growth and keep down weeds. A little soil may be drawn up to the stems with the hoe when the plants are about half grown, and if the weather is dry do not hesitate to give them a thorough soaking of water once a week, but watering must be done thoroughly, as driblets only encourage the roots to grow near the surface, thus doing more harm than good.

In rough, exposed situations it is advisable to secure each plant to a stake, as Brussels Sprouts yield far more sprouts of better quality when kept upright than when allowed to droop over.

Keep the ground between the plants clean and collect all decayed leaves and take them to the rubbish heap.

The ground will become hard on the surface through constantly treading on it to gather the crop, and should be lightly forked up about half way through the picking season.

There are many varieties, some tall growing and others dwarfer, with large spreading foliage. These latter should be allowed more space in which to develop than the others. One of the best sorts is Dwarf Gem. The sprouts of this variety are of medium size, firm, of a good colour, and ideal for the table, and the plants are as hardy as those of the larger sorts.

Brussels Sprouts make a second growth in the spring from where the original sprouts were removed, and in cold, late springs these secondary sprouts often prove very useful as a catch crop, therefore it is not wise to pull the stems up too soon unless the ground is required for some other crop. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

ASPARAGUS.

IN order to grow good Asparagus the ground should be drained thoroughly and the ground well worked to a good depth. Soil of a moderately light texture well incorporated with plenty of decayed manure as the trenching is being carried out will suit this most useful early vegetable.

One-year or two-year old plants are to be preferred to older roots and these should be healthy and planted so soon as the young growths are visible and with as little exposure of the roots and delay as possible.

Keeping the beds clear of weeds and top dressing them with rich materials are important details of cultivation. Occasional soakings of liquid manure in hot, dry seasons are also beneficial to the plants. Cutting the shoots too severely is very harmful to plants in permanent beds and should not be practised.

Good varieties are Early Giant, Argenteuil, Connover's Colossal, Reading Giant and Perfection. I would strongly advise growers, whose old beds are on the wane, to sow seeds of these varieties and raise a sufficient quantity of young plants to meet the requirements of a new bed, or to purchase two-year-old plants and plant them early in April. *H. Markham.*

HOME CORRESPONDENCE.

Big Bud Mite on Black Currants and Hazels.—My letter *re* big bud on Black Currants (page 393 of last December) created some interest; my object in writing was to discover if others had suspected the Hazel mite of being the culprit. The two first letters did not help much by stating the mites went under different names, for every student of natural history knows how many things that have been considered distinct varieties have proved later to be identical only under different environment. The letters by *Unit* and *A. S. Waller* (page 15, Jan. 3) were more to the purpose, and I think show that the subject is worth further investigation, for it is little use applying drastic remedies to Black Currants if the enemy is lurking in the Hazel, as I begin to suspect. My attention was first called to this subject in 1884, and I had some communication with the late Miss E. A. Omerod. One of her letters is now before me in which she identified the pest as "Phytoptus ribis, one of the Arachnoidea distinguished from the true spiders by the peculiar form and lesser number of legs and of the same nature as the Phytoptus which causes the so-called Witch Knots or Birches." but Miss Omerod made no mention of the Hazel. At that time it seemed the trouble appeared to be chiefly a northern one, as I had my specimens from Glasgow, Sheffield, Paisley, etc., though Miss Omerod said she had just found it in her own garden (Isleworth). *W. E. Harper, Basingstoke.*

Familiar Plants of Palestine.—I regret the last of the absorbing papers on "Garden Craft in the Canticles" by *Hilderic Friend*, has appeared in *The Gardeners' Chronicle*. I had hoped that some gardeners, who, like myself, served in Palestine during the war, would have made some comments on this entertaining topic. Had these papers been published before 1917 they would have been in great demand by the troops in the Holy Land, especially among gardeners and botanists and Biblical students. Many men of a studious turn of mind carried books in their packs, with which they entertained themselves on the history of the land, and not the least interesting were those books dealing with the vegetation met with from day to day. After months spent on the arid Sinai desert the first sight of vegetation in the neighbourhood of Wadi El Arish, the Biblical River of Egypt, caused great excitement, and one understood the joy that the Israelites must have felt on their first sight of the promised land. Botanists and gardeners were doubly elated, for here was something to break the everlasting monotony of the desert. Numerous Fig trees fill the bed of the Wadi, and along the coast they are to be found in perfect health and fructification, but not a drop of water do they get from April to October. The moist, sandy soil and the heavy dews keep them in health, and many a party sallied into "no man's land" at night to gather the refreshing fruit. The Rev. Hilderic Friend's learned reference to the Prickly Pear (p. 26, Vol. 76), and later to Titus finding himself in great peril on account of the hedges, brings back old memories. Before our troops could take Gaza special ladders had to be made to scale the impenetrable thickets which surrounded the gardens there. The Turk took great advantage of these barriers, which were bullet-proof and practically shell-proof, their dug-outs often being made under their shelter. The experiences of the Spaniards and Indians, as quoted on page 26, was often repeated during the Palestine campaign, and many a British soldier has unhappy recollections of these obnoxious prickles. Near Deis El Belah, I recollect seeing the Prickly Pear planted out in nursery rows, and in view of the writer's reference to the cochineal insect, I have wondered if it was planted for that purpose. The fruit was gathered by the natives and the prickles rubbed off in a cloth. We used to skin them and eat the luscious interior, but woe betide the man who inadvertently put a prickle into his mouth. It took days to get rid of. On page 234, Mr. Friend refers to the difficulty of growing Apples in Palestine. It may interest him to know that at Richon le Sion, a few miles south of Jaffa, the Jewish settlers have some flourishing Apple trees. I, personally, saw them bearing fruits, and they resembled an orchard in England. The phrase, "Strew me with Orange" (Vol. LXXVI., p. 234) is a happy one. None can forget the glorious Oranges which, owing to shipment difficulties, hung upon the trees until blossoms appeared in spring, when we saw fruits, flowers, and foliage upon the trees at one and the same time. The encampments near the groves were literally "strewn" with the delicious scent. The Rev. Hilderic Friend suggests the Oleander as the possible Rose of the Bible (Vol. LXXVI., p. 354). This beautiful shrub is plentiful around Petah Tikvels (Mulebbis), also further north in the Vale of Sharon, and from a short distance the abundant blossoms remind one of an English Rose garden. This seems a more likely plant than the Saffron. Some writers, I believe, consider the Anemone to have been the Rose alluded to, and this plant is very conspicuous in the Sharon Valley. Modern Botanists would seem to favour the Saffron as the "Lily of the field." Near the sea-coast at Gaza, however, a bulbous plant with pure white flowers struck me as possibly being the Lily of the Bible. It is an Amaryllid, with six perianth segments and a distinct corona; grows about two feet high, and bears strap-shaped leaves. Many men sent bulbs home; some, however, I found, were sending bulbs of a species of Allium in mistake. The white Amaryllis (?) flower was so much sought after that any plant with the least resemblance to it was considered to be a prize. The Rev. Hilderic Friend's allusion to the pruning of the vine reminded me of an unusual method of pruning I saw at Jaffa. A number of Jewish students were pruning a vineyard, and I noticed they were cutting midway between the nodes, and not close to the eye as we do. I tried to find out the reason and showed them how we did it in England, but they were very emphatic that my way was injurious to the vine. Language difficulties prevented me from getting at the real reason for their method. Dean Stanley's *Sinai and Palestine* was a book much sought after by the British troops, and during our stay around Jerusalem its references to the vineyards and Olive groves were carefully studied. The Olive trees in the Garden of Gethsemane were considered by many to look aged enough to have been there in the time of our Saviour. No English gardener could travel in Palestine without noting the ease wherewith the natives grow our choicest fruits—the Grape, the Melon, the Fig, and the Tomato. I saw fields of Tomatos, the plants lying on the ground and covered with fruits. The writings of the Rev. Hilderic Friend should find a place on the bookshelf of all lovers of gardens and of all Bible students. *R. Gardner.*

SOCIETIES.

ROYAL HORTICULTURAL.

Trial of Kales.

The following awards have been made to Kales by the Royal Horticultural Society after trial at Wisley.

Awards of Merit.

Limpsfield Greens, sent by Mr. H. Roberts, Oxted; *New Sprouting*, sent by Messrs. Barr and Sons.

Highly Commended.

New Labrador, sent by Messrs. Barr and Sons.

Trial of Sprouting Broccoli.

The following awards have been made by the Royal Horticultural Society to Sprouting Broccoli after trial at Wisley.

Award of Merit.

Christmas Purple Sprouting, sent by Messrs. Barr and Sons and Messrs. W. H. Simpson, Birmingham.

Highly Commended.

White Sprouting, sent by Messrs. Dobbie and Co.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, March 6.—Committee present: The Rev. J. Crombleholme (in the chair), Messrs. A. Burns, A. Coningsby, J. Cypher, J. Evans, W. Giles, A. Keeling and H. Arthur (Secretary).

Awards of Merit.

Odontioda Grenadier var. Empire and *Odontoglossum crispum Sunset*.—From Mrs. Gratrix.

Cypripedium Toy (*parentage unknown*).—From S. Gratrix, Esq.

Dendrobium variabilis, Bolholt variety (*nobile Cooksonii* × *Thwaitesiae.*)—From Capt. W. Horridge.

Groups.

S. Gratrix, Esq., West Point (gr. Mr. C. Branch), was awarded a Silver-gilt Medal for a group which included Denbrobiums in great variety. A large Silver Medal was awarded for a miscellaneous group of Orchids staged by Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns). A. Hanmer, Esq., Buxton (gr. Mr. G. Giles), was also awarded a large Silver Medal for a group, a special cultural award being granted to the gardener for general excellence of the plants.

Messrs. J. Cypher and Sons, Cheltenham, received a Silver Medal for an exhibit of Orchids.

SPALDING BULB GROWERS'

At Spalding Corn Exchange, on Saturday, February 21, there was a very fine exhibition of forced flowers—the show being one open to members of the Spalding and District Bulb Growers' and Market Gardeners' Association. The judges considered the Tulips were not well grown; they showed signs of having been forced too hard, the stems were weak, and heads drooping. Daffodils, on the contrary, were very fine, strong, and well-formed.

The Silver Challenge Cup, given by Messrs. Parsons and Co., of London and Glasgow, for the best exhibit, went to Mr. O. W. D'Alcorn for a magnificent collection, numbering forty different varieties. The other awards were as follow:—

Collection of Tulips in pots or boxes: First, Messrs. J. T. White and Sons; second, Mrs. H. F. Bates. Collection of Tulips (six vases): First, Messrs. J. T. White and Sons; second, Mr. F. D'Alcorn. Collection of Narcissi in pots or boxes: First, Mr. A. T. Royce; second, Mr. B. Baxter. Collection of cut Narcissi: First. Mr. E. W. Jacobs; second, Mr. O. W D'Alcorn. Box of a Trumpet Narcissi, tied and packed for market: First, Messrs. J. T. White and Sons; second, Mr. W. Groom. Box of any other variety, packed for market: First, Mr. G. N. Wright; second, Mr. B. Baxter. Bunch of forced flowers, tied for market: First, Mr. G. Lappin; second, Mr. B. Baxter. Collection of forced bulbous flowers, growing or cut: First, Mr. O. W. D'Alcorn; second, Mr. A. T. Royce; third, Mr. B. Baxter.

READING AND DISTRICT GARDENERS'

There was an excellent attendance of the members, presided over by the President, Mr. Frank E. Moring, at the fortnightly meeting of this association, held on the 9th instant. Instead of one lecture, "ten minutes" papers were given by various members, viz., on "Arum Lilies," by Mr. E. Blackwell; "The Best Six Apples," by Mr. A. H. Fulker; "Disease of Cyclamen," by Mr. J. Young; and "Freesias," by Mr. H. Reeves.

Excellent discussions followed the reading of each paper.

In a competition for six heads of Seakale for prizes presented by Mr. W. Chislett, Bell Hill Gardens. Wokingham, the first prize was gained by Mr. F. J. Green, Aldermaston Park Gardens, and the second by Mr. W. Saunders, St. Catherine's Gardens, Bear Wood.

In the non-competitive section, an Award of Merit was given to Mr. G. Clark, Dyson's Wood Gardens, for seven dishes of Apples; to the very fine educational exhibit of Richardias (Arum Lilies), staged by Mr. E. Blackwell, Foxhill Gardens, Reading; and to three very fine plants of Primula malacoides, including Sutton's New Advance, shown by Mr. F. Townsend, Hillside Gardens, Reading. Mr. A. Priest, Reading, exhibited a Parsnip which measured three feet six inches in length.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

Lecturing at a largely attended meeting of the members of this Society on Wednesday, the 11th inst., Mr. L. B. Stewart, of the Royal Botanic Garden, Edinburgh, showed by means of an elaborate series of lantern illustrations the different systems of plant propagation in operation at that institution. He pointed out that the system adopted in Edinburgh was quite different from that followed in private gardens and commercial establishments. There pure sand was used as a compost and they never took any leaves off the cuttings. If the plants did not want the leaves then they threw them off themselves, and in the event of too many leaves being lost, it was regarded as an indication that there was something wrong in the environment. Describing the various frames in use, he stated they had a sun frame, which was one frame inside another, and plants were propagated at great speed in that heat; another frame was governed by electricity and the third took the form of a tropical propagating pit. Cuttings were taken every month and a record which was kept showed the best months for each genera. Another point was the temperature of the water used, which was the same as that of the sand in the frames. Specimen plants of Camphor, Croton, Gypsophila, climbing Hydrangea, Cytisus which took fifteen months to propagate; Rhododendron, Beech, Cactus, Dracaena, Bamboos, Smilax, etc., were shown on the screen in turn in order to demonstrate the differences between stem, root, nodal and internodal cuttings. Examples were given of plants that possessed a tendency to throw roots at an angle of

90 degrees, and as that formation rendered potting difficult, he found that by putting the plants in a pot to begin with, the root system assumed a natural bend and growth was more free and healthy. When referring to the extensive propagation of Bamboos at Edinburgh, mention was made of the interesting fact that so many as 10,000 plants of Arundinaria Fortunei were exported in twelve months. Discussing leaf propagation, Mr. Stewart exhibited examples of Coleus, Fig, Rose, Paeonia and Acanthus, and afterwards made brief reference to bulbous plants. Commenting on Pinus, he stated that it could not generally be propagated vegetatively, but it was discovered at Edinburgh that success attended their efforts when the cuttings were immersed in hot water so as to remove the resin from the cells and allow the callous to form. At the close of the lecture several speakers testified to the value of Mr. Stewart's remarks and on the call of the Chairman, Mr. T. B. Kerr, he was accorded a vote of thanks.

Mr. Harry Reid, Ruchill, a director of the Society exhibited specimens of a new seedling Rhubarb which matures early in March out of doors with no other assistance than a little horse manure litter deposited on the top of the crown.

ROYAL CALEDONIAN HORTICULTURAL.

The ordinary monthly meeting of this society was held at 5, St. Andrew Square, Edinburgh, on February 3, Mr. Robert Fife, president, in the chair. Dr. R. Stewart MacDougall, F.R.S.E., delivered a lecture on "Scale Insects: their Structure, Life-history and Relationships," illustrated by lantern slides.

The exhibits were:—Cyclamen, by Mr. E. Eggo, Larch Grove, Balerno (awarded a Silver Medal); collection of vegetables by Mr. George Houston, St. Raphael's House, Edinburgh; Orchids, Sweet Peas, and Culinary Peas by Mr. D. Armstrong, The Drum, Gilmerton, and Hyacinths by Miss Dickson, Edinburgh.

Obituary.

Marianne Baines.—We regret to learn of the death of Miss Marianne Baines, the eldest child and devoted helper of the late Mr. Thos. Baines of Palmers Green, London. Some of our readers will remember Mr. Thos. Baines who was one of the most successful cultivators of indoor plants of his time. He was also a frequent contributor to our pages and he wrote a book entitled *Store and Greenhouse Plants* which was for many years considered a classic on this subject. In all his literary work he was greatly assisted by his daughter, Marianne Baines, who passed away on the 1st inst. at the age of 77 years.

Geoffrey Carter Page.—It is with very deep regret we learn of the death of Mr. Geoffrey Carter Page, which occurred on Monday, the 16th inst., following an attack of double pneumonia. Mr. Geoffrey Carter Page was the son of Mr. C. W. Carter Page; he was only twenty-three years of age, but had already begun to take an active part in the conduct of Messrs. Carter Page and Co.'s business at London wall. He was a frequent visitor to the meetings of the Royal Horticultural Society and had become known to a large number of horticulturists who will learn with deep regret of the untimely death of this promising young man.

William C. Smith.—We regret to announce the death of Mr. William C. Smith, which occurred at his residence, Cranford Cottage, Aberdeen, on Saturday, the 14th inst. Mr. Smith was for over thirty years gardener at Cranford House, Aberdeen, and was highly esteemed by the McHardy family whom he served so long and faithfully. He was devoted to his profession and very early in his service won the confidence of the late Mr. David McHardy, under whom he served for the greater part of his life at Cranford House. He was ever ready and willing to give advice to those who sought it, and his kindly and courteous personality gained for him a host of friends who will deeply regret his death. Mr. Smith was in his 68th year.

TRADE NOTES.

The following plants have been registered with the International Bureau of Registration of Horticultural Novelties connected with the Fédération Horticole Professionnelle Internationale:—Cantaloup Melon named Muscat de Lyon which has medium-sized fruits with almost smooth skin; colour light green to yellow; flesh red and juicy and of muscat flavour. The vendors are MM. Rivoire, Lyon, France; and Salvia splendens variety Perle Blanch, a dwarf plant of vigorous growth, bearing white flowers. This was raised by M. Beghelli, Cannes, France, and is being distributed by MM. Rivoire, Lyon, France.

Mr. Edward Bull, of Bull's Plant Food Co., has again been returned, unopposed, as a member of the East Sussex County Council.

ANSWERS TO CORRESPONDENTS.

Broccoli and Brussels Sprouts Diseased: *A. B.* The disease from which your plants are suffering has been identified as Mycosphaerella brassicicola. This disease has been known for a very long time and has, on occasion, been prevalent in the Isle of Wight and Cornwall. The effect of the disease is shown by the fading of the leaves and the production of numerous and rather crowded, circular spots, of a pale brownish colour, edged with green. Later, the spots have a greenish appearance and frequently appear as though they had been sprinkled very lightly with ink in the form of a very fine spray. So far as we are aware, there is no known remedy for the disease and it will therefore be desirable to grow all Brassica crops so far as possible from the sites occupied by diseased plants.

Furnishing a Large Pergola: *Westry.* A pergola of the description you give would cover a run of about 450 feet and have fifteen feet to eighteen feet cross-timbers. It would therefore need plants of vigorous growth to furnish it and the idea of planting two plants to each column, the more vigorous one to furnish the cross-beams and the less vigorous one to cover the column is a good one. We suggest planting Wistarias at about every fifth or sixth set of columns and besides allowing the plant to furnish its own cross-timbers we should train a rod in each direction along the length of the pergola till they finally met. The appended list of plants in suggested pair combinations are of known vigour. The first plant (or variety) in each case is intended to furnish the cross timbers and the second to furnish the columns:—Wistaria sinensis and Clematis Lady Caroline Neville, Forsythia suspensa and Kerria japonica fl. pl., Bignonia grandiflora and Punica Granatum, Jasminum officinale affine and Xanthoceros sorbifolia, Jasminum nudiflorum and Exochorda grandiflora, Periploca graeca and Clematis Jackmanii superba, Aristolochia Sipho and Clematis purpurea elegans, Clematis montana and Clematis Imperatrice Eugenie, Clematis montana rubens and C. Beauty of Worcester, Ampelopsis hederacea and Chimonanthus fragrans, Pueraria japonica and Ceanothus Perle Rose, Philadelphus coronarius and Viburnum macrocephalum, Clematis flammula and Hydrangea scandens, Vitis Coignetiae and Rose Climbing Mrs. John Laing, Vitis humulifolia and Akebia quinata, Lonicera aurea reticulata and Lonicera fragrantissima, Lonicera gigantea superba and Lonicera flava, Actinidia chinensis and Weigela Mont Blanc, Solanum jasminoides and Ceanothus Gloire de Versailles, Vitis purpurea and Abelia rupestris, Menispermum canadensis and Clematis Lucie Lemoine. Roses:—Félicité et Perpétue and Alister Stella Gray, Hiawatha and Gruss an Teplitz, Emily Gray and Gardenia, American Pillar and Climbing Lady Ashtown, Léontine Gervais and Lady Waterlow, Excelsa and Paul's Scarlet Climber, Tausendschön and Climbing Ophelia, Albéric Barbier and Madame Bérard, Crimson Rambler and Effective, Mdme. A. Carriére and Aimée Vibert, René André and Bouquet d'Or, Jersey Beauty and Climbing Kaiserin Augusta Victoria, The Dawson Rose and Zéphirine Drouhin.

Herbaceous Border: *S. W.* Fine coal ash is useful for mixing with heavy clay soils as it tends to make the texture loose and allow the air to enter freely. Its use of light soils is not to be recommended. A border for hardy perennial plants should be well dug and enriched with manure some considerable time previous to planting, so that the ground will be settled in position. When the plants are growing vigorously and showing their flower buds, applications of weak liquid manure or some quick-acting fertiliser in solution applied to the roots will prove beneficial. With regard to a list of twelve good herbaceous perennials that will flower over a long time, there are almost endless kinds and varieties, but twelve that may be recommended are: Armeria Ruby, ruby-rose coloured flowers, from June to September and growing about two feet high; Campanula Telham Beauty, a most delightful variety with lavender-blue flowers produced in June, July, and August, height three feet; Coreopsis grandiflora, Perry's variety with semi-double, golden-yellow flowers produced from June to September, height two feet; Delphinium Belladonna, with flowers of a delightful sky-blue colour produced from June to September, height two feet to three feet; Erigeron Elsie, a semi-double, rose-pink variety, flowering continuously from July to September, height one foot; Gypsophila paniculata, which produces its snow-white flowers through the whole of the summer, height three feet; Helenium Wyndley, a yellow and crimson variety attractive in August, September, and October, height three feet; Heuchera brizoides gracillima, with flowers of a rich rose colour, the blooms expanding from June to October, height two feet; Liatris pycnostachya, a useful plant with crimson-purple flowers produced from July to September, height three to four feet; Potentilla formosa, a species with Cherry-red flowers, in bloom all the summer, height one-and-a-half foot; Phlox Mrs. Van Hoboken that produces its soft pink blossoms in late summer and autumn, height three feet; Statice latifolia, a species with lavender coloured flowers that are produced in June, July, and August, height two feet; and Tritoma gracilis in shades of orange, yellow, and scarlet, attractive in July, August, September, and October, height three feet.

Schizanthus mildewed: *K. T.* The Schizanthus is attacked by a mildew, possibly by Erysiphe cichoracearum. This fungus may be controlled by applying a dusting of sulphur from a fine muslin bag or by a pair of sulphur bellows. In any case both sides of the leaves should be dusted with sulphur.

Communications Received.—A. G.—H. M.—H. F.—G. H. H.—J. C.—E. S. R.—W. K.—Anxious.—S. M. S.—H. E. D.—Fairway (thanks for 2 6 for R.G.O.F. Box).—W. A. S.—L. R. A.—H. W.—Mrs. W.

MARKETS.

COVENT GARDEN, Tuesday, March 17, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0-13 0
—elegans	10 0-12 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Azaleas, per doz.	15 0-36 0
Cacti, per tray, —12's, 15's	5 0- 7 0
Cinerarias, doz.	15 0-24 0
Crotons, per doz.	30 0-45 0
Cyclamen—	
—32's	36 0-48 0
—48's	24 0-30 0

	s. d. s. d.
Cyrtomium	10 0-15 0
Erica melanthera, 48's per doz.	21 0-30 0
— —60's, per doz.	8 0-10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0- 4 0
Marguerites, white, 48's, per doz.	18 0-30 0
Nephrolepis, in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large 60's	5 0- 6 0
—small	4 0- 5 0
—72's, per tray of 15's	2 6- 3 6

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d
Adiantum decorum, doz. bun.	18 0-24 0
—cuneatum, per doz. bun.	12 0-15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0- 3 0
med. sprays	1 6- 2 6
short „	0 9- 1 3
—Sprengeri, per bun.	
long sprays	1 6- 2 0
medium „	1 0- 1 6
short „	0 4- 1 0
Azalea, white, per doz. bun.	9 0-10 0
Bouvardia, white, per doz. bun	12 0-15 0
Camellias, White, per box	3 6- 4 0
Carnations, per doz. blooms	3 0- 5 0
Croton leaves, var., doz. leaves	0 9- 2 6
Daffodils—	
—Emperor, per doz. bun.	10 0-12 0
—Golden Spur, per doz. bun.	3 0- 5 0
—Henry Irving, per doz. bun.	3 0- 5 0
—King Alfred, per doz. bun.	10 0-12 0
—obvallaris, per doz. bun.	3 0- 5 0
—Sir Watkin, per doz. bun.	5 0- 10 0
Fern, French, per doz. bun.	0 9- 1 3
Freesia, per doz. bun., special	6 0- 8 0
—White, per doz. bun.	2 6- 3 0
—Special, long, per doz. bun.	9 0-12 0
Galax, American, green and bronze, per doz. bun.	— 3 0
Iris tingitana, per doz. spikes	5 0- 6 0
Lilac, Dutch, per spikes	4 0- 8 0
Lilium speciosum rubrum, long, per doz. blooms	4 0- 5 0
—short „ „	3 0- 4 0
Lilium longiflorum long, per doz.	7 0- 8 0
Lily of the Valley, per doz. bun.	24 0 36 0
Narcissus—	
—Scilly White, per doz. bun.	3 0- 5 0
—ornatus, per doz. bun.	6 0-12 0
Orchids, per doz.	
—Cattleyas	24 0-30 0
—Cypripediums	5 0- 7 0
Primroses, per doz. bun.	2 6- 4 0

	s. d s. d.
Prunus triloba (Dutch), per bun.	1 0- 1 6
Richardias (Arums) per doz.	7 0- 9 0
Roses, per doz. blooms, Richmond	6 0- 9 0
Ruscus, French, per bun.	1 0- 2 0
Smilax, per doz. trails	2 0- 3 0
Sweet Peas, per doz. bun.	15 0-18 0
Tulips, per bunch—	
—Bartigon	1 6- 3 0
—Clara Butt	2 0- 3 0
—Couronne d'Or	2 0- 2 6
—Farncombe Sanders	1 3- 2 6
—La Reine	1 6- 2 0
—Mons Tresor	2 0- 2 6
—Prince of Austria	1 9- 2 0
—Rosina	1 6- 2 0
—Thomas Moore	1 6- 1 9
—Wm. Copland	2 0- 2 6
Violets, per doz. bun	2 0- 4 0
French Flowers—	
Anemone, dble, pink, per doz.	3 6- 5 0
—De Caen, mixed, per doz.	8 0- 9 0
—single blue, per doz.	3 0- 4 0
Carnations, per bun.	1 6- 2 0
Freesia, long, per pad	14 0-15 0
Marguerite, yellow, per pad	8 0-10 0
Marigolds, per pad	7 0-10 0
Mimosa, per pad	8 0-12 0
—per bun.	1 0- 1 3
Narcissus—	
—Grand Primo, per doz. bun.	3 6- 5 0
—Soliel d'Or, per doz. bun.	4 0- 5 0
Ranunculus, double scarlet, doz bun.	8 0-10 0
—Carmine, per doz. bun	8 0-12 0
Star (Allium), per pad, 48's	10 0-12 0
Stock, double white, per pad 24 bunches	7 0- 9 0
—double coloured	7 0- 8 0
Violets, Parma, per bun.	3 0- 3 6
—single, per pad	6 0- 8 0
Wallflowers, per pad	5 0- 7 0

Remarks.—Supplies appear to be sufficient for present requirements and, with the exception of those for white blooms, prices have been somewhat easier during the past week. Daffodils especially have been cheaper owing to increased supplies from the Channel Islands. A better selection of Roses is now on sale including Mrs. Aaron Ward, Madame Butterfly, Richmond and Sunburst. Carnations are very medium in quality. Good prices are maintained for best quality blooms, which vary from 3/6 to 7/- per dozen. Richardias (Arums) have increased in quantity considerably. Lilium longiflorum and L. speciosum rubrum are now in a finer condition. Darwins are the most attractive amongst Tulips; the principal varieties are Wm. Copland, Farncombe Sanders, Clara Butt and Bartigon. There is also a fine selection of the usual market varieties. Larger consignments of blooms are arriving from Cornwall, consisting of some fine quality Daffodils, Anemones, Violets, Primroses, Wallflowers, with Narcissus Paper-white, Grand Primo and ornatus. Amongst French flowers Acacia (Mimosa) and Paper-white Narcissus are practically finished for the season, but all other blooms are arriving in good condition, including Anemones, single and double, Freesias, Marigolds, Marguerites, Violets, white and coloured Stocks, Allium (Star) and scarlet and yellow Ranunculus. White and mauve Lilac is arriving in fine condition from Holland, also small consignments of Prunus triloba.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Albemarle	35 0-45 0
—Oregon Newtown	14 0-16 0
—Newton Wonder	8 0-14 0
—Bramley's Seedling—	10 0-16 0
—Californian Newtown	12 0-14 0
—Spitzenberg	13 0-16 0
—Stark	26 0-30 0
—Baldwin	26 0-30 0
—Lane's Prince Albert	7 0-14 0
Bananas, singles	16 0-25 0
—doubles	17 0-27 6
Grapes—	
—Gros Colmar	4 0- 6 0
—Belgian Colmar, per lb.	2 6- 3 6
Grapes, South African—	
—Hermitage	8 0-10 0
—Red	10 0-12 0
—White	12 0-15 0

	s. d. s. d.
Grape Fruit, Cuban	20 0-24 0
—Jamaica	20 0-25 0
—Florida	22 6-27 6
Lemons, Messina, per box	8 0-10 0
—Murcia	12 0-14 0
—Naples	15 0-25 0
Oranges, Jaffa	16 0-20 0
—Spanish—	
—300's	16 0-21 0
—360's	16 0-22 6
—504's	16 0-22 6
—Seville	20 0-25 0
—Malaga Sour	17 0-20 0
Pears, South African—	
—Beurré Hardy	4 0- 6 0
—Beurré Superfin	5 0- 7 0
—Louise Bonne of Jersey	4 0- 6 0
Pines	2 0- 4 6
South African Peaches	4 0-12 0
—Nectarines	5 0-10 0
—Plums, Kelsey	8 0-12 0
Tunis Dates, doz.	5 0- 6 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	1 6- 2 6
—Worthing	1 6- 2 6
—Madeira, per box	3 6- 6 0
Beets, per cwt.	4 6- 5 0
Cabbage, per tally	10 0-12 6
Canary Island Tomatos	16 0-22 6
Cauliflowers, per doz.	3 0- 5 0
Forced Mint, per doz.	4 0-10 0
Celery, best, washed, per bundle	2 0- 3 0
—Second	0 9- 1 0
Chicory, per lb.	0 4-0 6
Carrots, per bun.	0 8-0 10
—New	— —
Cucumbers, per doz.	8 0-14 0
Dutch Onions	11 6-12 6
Endive, per doz	1 6- 3 6
Batavia, per doz.	3 0- 3 6
English Asparagus—	
—Best	7 6- 8 0
—Other	4 0- 5 0
French Asparagus—	
—Paris Green	6 6- 7 6
—Lauris	4 0- 6 0
Greens, best, per bag	5 0- 6 0
Horseradish, per bundle	2 0- 2 6
Leeks, per doz. bundles	2 6- 3 6

	s. d. s. d.
Lettuce, per dozen	1 6- 2 0
—Outdoor	2 6- 3 0
Mushrooms, cups	3 0- 4 0
—broilers	3 0- 3 6
Onions, Valencia, per case	15 6-17 0
—English, per cwt.	12 6-14 0
Parsnips, per cwt.	4 0- 6 0
Peas, French, per cane	7 0- 8 0
Potatos, Canary Island, per case	8 0-12 0
—Spring crop	15 0-16 0
Potatos, per ton—	
—Dunbar	220 0-240 0
—King Edward	190 0-210 0
—White	90 0-160 0
—New Guernsey lb.	0 8-0 10
Potatos, New—	
—Algerian, per lb.	0 2½-0 3
—Azores, per case	10 0-18 0
Radishes—	
—Guernsey round	1 6- 2 0
—Guernsey long	1 0- 1 6
—French	2 0- 3 0
Rhubarb, Forced per doz.	2 0- 2 9
—"Natural" per doz.	6 0- 8 0
Savoys, per tally	10 0-15 0
Seakale, per lb.	0 9-0 10
Spinach, per bushel	5 0- 7 0
Sprouts, bag	4 0- 7 0
Sweet Potatos	— -3 0
Turnips, new, per doz. bun.	10 0-12 0

Remarks.—A very good tone has prevailed all the week, business being decidedly brighter. Shipments of South African fruits are very heavy, consisting mainly of Peaches, Plums, Nectarines, Pears and Grapes, all of which have moved out satisfactorily. Fair supplies of imported Apples are on offer and comparatively large quantities of home-grown Apples also. These latter are mostly from cool chambers and are in a most excellent condition; their prices are such that as should fully satisfy the growers. A few hothouse Grapes continue to arrive and are in good demand. Good Oranges are in request and selling at improved prices. Forced Beans and Potatos are more plentiful and are quoted lower. Asparagus is coming to hand in larger quantities and selling at more reasonable rates. Seakale is scarce and keenly inquired for. Mushrooms are scarce and dear, but supplies should improve with milder weather. New Potatos from the Canary Islands, Algeria and Azores are a quiet trade. Salads are in firm request. Green vegetables generally are firmer in price. Trade in old Potatos is fairly good with supplies fully equal to the demand. Forced Rhubarb is selling fairly well considering that larger supplies of natural Rhubarb are now arriving in the market.

GLASGOW.

The general tone of the fruit market ruled very firm during the past week, and Apples and Oranges in particular made a further advance in prices. A first consignment of Denia Blood Oranges made 30/- per case of 240, and 28/- for 300's, while Valencia's sold at 17/- for 360's and 504's, and 18/- for 300's. Seville Bitters brought 18/-, Palermo, 13/-; Jaffas, 19/- to 21/-; Sunkist, 18/- to 20/-; Naples Lemons, 18/6; and Palermo 300's, 14/-. Supplies of Grape Fruit were plentiful, and as the demand at this season is limited, Costa Rica fruit declined sharply to 18/-, while other qualities averaged from 15/- to 16/-. Fruit is arriving from the Cape in fine condition, and found a ready market. In Pears, Williams' Bon Chrétien made 4/6 to 5/6 per box; Louise Bonne of Jersey, 5/6 to 6/6; Beurre Hardy, 6/- to 7/6, and Beurre Superfine, 5/- to 6/6, while Nectarines brought 7/- to 10/-; Peaches, 4/6 to 5/- for yellow flesh, and 9/- to 10/6 for freestone varieties; Kelsey Plums, 8/6- to 10/6, and Satsuma, 6/6 to 8/-, and White and Black Grapes, 11/- to 14/-. English Gros Colmar Grapes kept steady at 3/9 to 5/- per lb., and Scotch at 3/6 to 4/-. Good quality Apples were dearer. Albemarle Newtown rose to 54/- per barrel, and other brands to 45/-. While York Newtowns averaged 27/- to 35/-, Stark 30/- to 36/-, Baldwin 28/- to 35/-, Newtown 16/- to 18/- per case, Winesap 17/6 to 20/6, and Ortley 16/- to 18/6.

After easing off in mid-week prices of cut flowers recovered on Friday when values again favoured sellers. Trade continues good but daily supplies were not very plentiful. Buyers paid up to 8/- per bunch for the first consignments of the new Iris, Wedgwood Blue, but at the end of the week the price was back to 5/- and 6/-. Carnations remained steady at 4/- to 5/- per doz for best and 2/- to 3/- for medium. Roses again returned good values to growers, Sunburst obtaining up to 14/- per doz. and Richmond, 5/- to 8/-. Tulips did not quite maintain former prices, except in the case of special Salmonette from Mavisbank, which returned 1/6 per bunch of 6's. The averages obtained by other varieties were as follows:—Bartagon, 1/- to 1/4; W. Copland, 10d. to 1/2; Farncombe Sanders, 1/- to 1/3; Tea Rose, 8d. to 1/-; Couronne d'Or, 10d. to 1/2; Lucretia, 1/- to 1/2; Prince of Austria, 10d. to 1/-, and Murillo, 8d. to 1/-. A pretty Narcissus with white perianth and orange red cup named Glory realised 1/6 per bunch, and Daffodils ranged from 9/- to 10/- per doz. bunches for Golden Spur, 9/- to 12/- for Emperor, 6/- for small blooms of Sir Watkin, and 8/- to 12/- for ornatus. Richardias made 6/- to 9/- per doz; Wallflower, 2/6 to 3/-; Prunus, 2/6; white Lilac, 6/- to 8/-; coloured, 4/- to 6/-; Snowdrops, 1/6; pink Anemones, 2/- to 2/6; Violets, 1/6, and French Stock, 8/- per pad.

In the vegetable section Cauliflowers advanced to 10/- per crate of two dozen, but Onions were cheaper at 13/- to 15/- per case. Evesham Leeks made 6/- to 7/- per doz. bunches; Syboes, 6/-; Lettuce, 2/3 to 2/9; Radish 2/6 to 3/-; Endive, 3/6 to 4/6; Cress, 2/6, and Guernsey Beans, 2/- to 2/3. Pulmont-grown Rhubarb sold at 52/- per cwt, but other qualities averaged from 44/- to 48/-.

THE WEATHER IN FEBRUARY.

The rainfall was considerably above normal for the month, the total amount being 3·17 inches, the wettest day—the 24th—being responsible for ·69 of an inch. In all there were sixteen official rain days, six on which the fall was less than ·04 inch, leaving only six absolutely dry days. This is rather remarkable as February is usually a dry month. The amount of bright sunshine was slightly under the average. On sixteen days the sky was completely overcast at the observation hour; 64·8 sunny hours were recorded, a daily average of 2·3 hours. The temperature was a little higher than normal. The highest maximum of 50° occurred on the 2nd and 8th, the lowest minimum of 29° on the 7th and 22nd, the mean maximum temperature being 43·8° and the mean minimum 34·3, giving a mean temperature for the month of 38·5°, and an absolute range of 21°. On the grass the lowest reading of 21° occurred on the 7th, and there were in all eleven days of ground frost. The soil temperature at one foot deep, with slight fluctuations, was the same at the end as it was at the beginning, viz., 38°. Barometric pressure was comparatively low, periods of deep depression occurring from the 8th to the 17th, and again from the 23rd to the 28th. The highest reading, 1023·1 millibars = (30·214 inches), occurred on the 4th, and the lowest, 968·1 mbs. = (28.588 inches), on the 26th. Only on one day, the 7th, was snow lying at the observation hour (9 a.m.) Ground haze was frequent, but there were no fogs. Wind direction was very variable, but only on the afternoon and evening of the 10th did it reach gale force. *John Davidson, Meteorological Station of the St. Andrews Provincial Committee, Training College Gardens, Mayfield, Dundee.*

GARDENING APPOINTMENT.

Mr. G. Howell, previously plant foreman at Knowsley Hall, Prescot, as gardener to The Rt. Hon. Lord Vestey, Kingswood, Dulwich, S.E. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.).

CATALOGUES RECEIVED.

Cooper, Taber and Co., Ltd., 90, Southwark Street, S.E. 1.—Seeds (Wholesale).

Barr and Sons, 11, King Street, Covent Garden, W.C. 2.—Hardy perennials, rock plants, alpines, etc.

Allwood Bros., Haywards Heath.—Carnations.

Miss Stanistreet, Killaloe, Co. Clare.—Violets.

E. P. Dixon and Sons, Ltd., Hull—Farm Seeds.

Stuart Low Co., Bush Hill Park, Middlesex.—Carnations.

William Watt, Cupar.—Farm Seeds.

Foreign.

J. G. Ballego, Bloemhove Nurseries, Leiden, Holland—Dahlias (Wholesale).

South Africa.

Ayres' Nurseries, Rosebank, Cape Town, South Africa.—Bulbs.

SCHEDULES RECEIVED.

Accrington and District Chrysanthemum Society.—Exhibition to be held in the Town Hall, Accrington, on Saturday, November 7.—Secretary, Mr. A. A. Crabtree, Arden View, Hodder Street, Accrington.

Dorset Horticultural Society.—Exhibition to be held in Ranston Park, on Wednesday, July 29.—Secretary, Mr. H. R. Tuffin, Ranston Gardens, Blandford, Dorset.

Sevenoaks Horticultural and Floral Society.—Exhibition to be held at Knole, on Wednesday, July 29.—Secretary, Mr. H. Lagell, Edenhurst Gardens, Oak Hill, Sevenoaks.

SEED POTATOES.

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May Queen	16/-	9/-	5/-	2/9
Duke of York	13/-	7/-	4/-	2/3
Midlothian Early	13/-	7/-	4/-	2/3
Sharpe's Express	11/-	7/-	4/-	2/3
Sir John Llewellyn	12/-	7/-	4/-	2/3
Eclipse	11/-	7/-	4/-	2/3
Sharpe's Victor	16/-	9/-	5/-	2/9
Epicures	14/-	8/-	5/-	2/9
British Queen	11/-	7/-	4/-	2/3
Immune Ashleaf	14/-	8/-	4/-	2/-
Edzell Blue	18/-	10/-	5/-	2/6
King Edwards	9/-	5/-	3/-	1/6
Rhoderic Dhu	14/-	7/-	4/-	2/-
Ally	16/-	8/-	4/-	2/-
Great Scot	14/-	7/-	4/-	2/-
Kerr's Pink	14/-	7/-	4/-	2/-
Majestic	14/-	7/-	4/-	2/-
Tinwald Perfection	12/-	6/-	3/6	2/-
Golden Wonder	12/-	7/-	4/-	2/-
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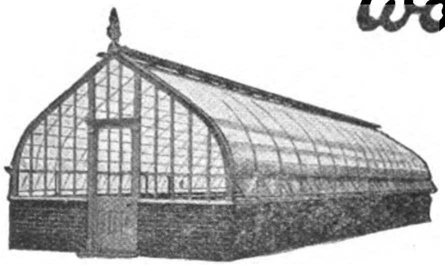

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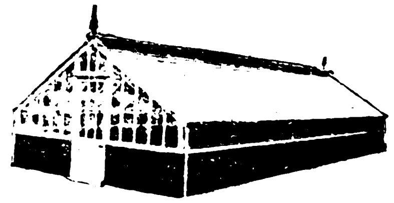

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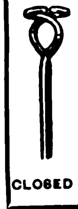

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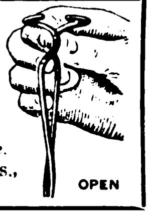

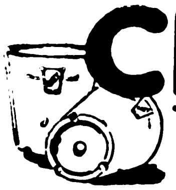

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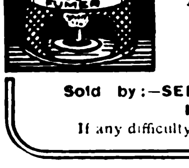

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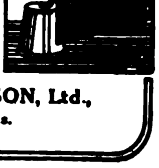

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THE Gardeners' Chronicle

No. 1996.—*SATURDAY, MARCH* 28 1925.

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Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 45·°5

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, March 25, 10 a.m. Bar. 29·2, temp. 40°. Weather, Bright.

The Washing out of Soil Nitrogen.

THE long-continued measurements of the annual loss of soil nitrates by the leaching effect of rain, which have been carried on at Rothamsted for many years, have taught agriculturists how considerable is the impoverishment of soil from this cause. Year in and year out the gauges at Rothamsted show an average loss of 31.4 lb. of nitrogen per acre. The present season, with its incessant rain, must have taken a heavier toll, and we should not be surprised if garden and farm yields during this year were depressed accordingly. In any case the grower would be wise to discount this possible cause of decrease in soil fertility by adding to the soil nitrate of soda or sulphate of ammonia in somewhat more liberal measure than he is accustomed to do. Recent measurements of loss of soil nitrogen* made by Professor J. Hendrick, at Craibstone, Scotland, add usefully to our knowledge of this subject. In these experiments the soil used in the gauges is cropped, and hence it is possible to compare the rate of loss of nitrogen from cropped and uncropped soil. In-as-much as no one likes to think of the soil fertility of his land running down the drains it is satisfactory to learn that, in point of fact, the loss of nitrates by leaching is very much less from cropped than from uncropped land. This is strikingly shown by the figures for the year 1922. In the early months the soil of the gauge was uncropped. In April an Oat crop with seeds for hay was sown so that the surface was covered with vegetation from May onward. During the first four months of the year the loss of leaching nitrogen was at the rate of over thirteen pounds per acre. During the remaining eight months of the year it was rather less than five pounds. There would seem here a moral to be learned, and that is that where cultivation ventures permit of it a winter catch crop of Rye or some other hardy plant would prove a valuable conserver of soil fertility, for it need not be said an adequate supply of nitrates in the soil is one of the essential pre-requisites for rapid growth and large crop production. It would be interesting if it were shown that the value of green manuring lies not only in what it adds to the soil, but also in what it prevents being taken away from it. Another observation of interest recorded by Professor Hendrick is that of nitrogenous manures added to the soil in normal amounts little or none is washed out even during very wet weather.

Mr. F. Kingdon Ward.—Our readers will be glad to learn that Mr. F. Kingdon Ward got back safely to India on February 25. He writes that his expedition in Tibet has been a great success, and good results have been obtained.

Presentation to Mr. G. Arluison.—Before the commencement of business at the Council meeting of the Chamber of Horticulture on the 18th instant, a pleasant ceremony took place by way of the presentation of a gold-mounted umbrella, suitably engraved, to Mr. G. Arluison, who has acted as the British International Secretary to the Fédération Horticole Professionnelle Internationale for the past five years, in a honorary capacity. At the request of the Chairman, Mr. J. S. Brunton, a member of the British Delegation to the first International Conference, made the presentation, and spoke in eulogistic terms of the splendid services rendered to the Federation by Mr. Arluison. Mr. C. G. L. Du Cann also referred to Mr Arluison's valuable services to the Fédération.

Bulb Show at Kilmarnock.—At the Spring show of Daffodils, Hyacinths, etc., held at Kilmarnock on Saturday, the 14th inst., Mr. James Hutchison, St. Andrews Street, created a remarkable record by winning twenty-six first prizes out of a total of thirty-seven classes. With a total of thirty-two points he also won the Borland and McAndrew Challenge Cups, with accompanying Gold Medals, and a Challenge Rose Bowl and Medal. This was Mr. Hutchison's first appearance as a competitor.

The Temperate House at Kew.—Several of the Rhododendrons in the Himalayan House, that constitutes a wing of the large Temperate House at Kew, are in bloom, including some of the largest specimens. The plants will provide a very fine spectacle for the next few weeks an those of our readers who propose visiting Kew in the immediate future are advised to include the Himalayan House in their tour of inspection. The big specimen of Camellia reticulata in the main building is now a magnificent spectacle, being covered with hundreds of its beautiful flowers. Several species of Acacia are also in bloom in the Temperate House.

Combating Fungous Diseases.—The Forestry Commissioners have had under consideration the question of mycology in relation to forestry work, and as they regarded it as a matter of urgency, that a means should be found to combat fungous diseases, which were causing the Department serious loss in their nurseries and young plantations, they decided to make a grant not exceeding £500 to Edinburgh University in respect of the year commencing April 1, for research in this connection, to be carried out by the Botanical Department of that Institution. The University Court has welcomed the proposal and concurred in the arrangements suggested by the Forestry Commissioners.

Behaviour of Plums on different Root Stocks.—Under the auspices of the Technical Committee of the Chamber of Horticulture, Mr. Ronald G. Hatton, Director of East Malling Research Station, will deliver a lecture in the Drawing Room, Y.M.C.A. Building, Tottenham Court Road, London, W.C. 1, on Wednesday, April 1, when the Chair will be taken by Mr. Alex. S. Galt at 3.15 p.m. The subject of Mr. Hatton's lecture will be "The Behaviour of Plums at East Malling upon Different Varieties of Root Stock," and as most of the information that Mr. Hatton will give on this occasion has not yet been published, the lecture should prove exceptionally interesting to market-growers, nurserymen, and horticulturist generally, all of whom are cordially invited to attend and participate in the discussion.

Sugar-Beet Industry.—The Ministry of Agriculture points out to farmers within a working radius of the existing Beet Sugar factories, and of those in course of erection, that these factories require a further contracted acreage, in order that, with the assistance of the subsidy now to be granted on sugar produced, they can make an effective start in establishing the Sugar Beet industry in this country on a broad and stable basis and justify the large expenditure of capital to which the manufacturers stand committed. The subsidy scheme has been designed in the belief that the Beet Sugar industry will prove of great national value, but the success of the scheme necessarily depends on the support of the farming community. The Ministry feels, therefore, that having regard to the fact that the prices offered to the farmers for their Beets have received the approval of the National Farmers' Union and are likely to ensure a reasonable return on the costs of production, every farmer should give serious consideration to the introduction of Sugar Beet cultivation into his farming programme.

International Horticultural Exhibition at Haarlem.—The International Spring Flower Show at Haarlem which was opened to the public by the Dutch Prime Minister and Minister of Agriculture and Home Affairs on March 13, will remain open until May 21. The exhibition as a whole reflects great credit upon the organisers and exhibitors and although most of the exhibits at the opening date were provided by Holland there were several fine displays from English growers, including an effective group of Carnations from Mr. C. Englemann and a collection of Narcissi from Mr. P. D. Williams. The principal subjects exhibited were sheaves of Lilac from Aalsmeer, Hyacinths, Tulips, Narcissi, Hydranges, Cyclamens and other indoor plants. The members of the International jury were welcomed by Mr. E. H. Krelage, President of the Exhibition Committee, who stated that Mr. H. C. Dresselhuys had been chosen as President. The British members of the jury included Mr. A. H. White, Mr. Herbert Smith, Mr. W. H. Cutbush, Mr. C. Engelmann, Mr. T. Want and Mr. J. S. Brunton. Unfortunately the weather was extremely unkind, snow falling heavily during the night previous to the opening day. The members of the jury were entertained by the Haarlem Society to a concert and dance and were also the guests at two banquets given by the Bulb Exporters' Association and the General Bulb Growers' Society, at which functions

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* The Loss of Nitrates from Cropped Soils. *Agricultural Progress*, II., 1925.

Mr. A. W. White and Mr. J. S. Brunton respectively responded to the toast on behalf of the British delegates. On Saturday, March 14 the English visitors spent a very enjoyable day visiting several well-known Dutch nurseries and the flower salerooms at Aalsmeer.

Sugar-Beet Culture in Scotland.—Very keen interest continues to be evinced in the growing of Sugar-Beet in the north of Scotland, and that doughty champion of the project, General Sir Walter Ross, of Cromarty, declares that much higher profits can be obtained from this crop than from any other grown in the north. As proof of the sincerity of his convictions, Sir Walter is this year devoting a considerable area of his own land to the cultivation of Beet. Of course, it has to be borne in mind that growing Beet successfully and growing it profitably are two entirely different propositions, but there seems little doubt that at the present minimum price of forty-four shillings per ton f.o.b., offered by Greenock refiners, the grower who goes in for the enterprise should come out well on the right side. The great drawback meantime—one which will certainly be remedied should the matter be taken up whole-heartedly—is the cost of transport to the refining districts in the west of Scotland. This takes away a large amount out of the profits, but if Beet-growing is developed on a commercial scale a refining factory will soon be established near, say, Inverness. The results last season, which were from a much wider area and on a more extensive scale, demonstrated beyond doubt that Sugar-Beet can be grown with considerable success in the coastal areas of the Moray Firth from the mouth of the Spey to the Dornoch Firth, on land varying from good sandy soil to a strong loam. The average yield of ten tons per acre in Morayshire to twelve tons in some parts of Cromarty compares very favourably with a similar return in England. The sugar content in these trials ranged from 16 per cent. to 18·5 per cent., and was thus well above the standard of 15·5 per cent. And, be it noted, these results have been obtained with little knowledge or skill in the management of the crop, and much heavier returns are bound to accrue with more experience and under more favourable conditions than prevailed last season—one of the worst and most sunless we have had for many a year. Thanks to the fine work done by the experts of the Aberdeen and North of Scotland College of Agriculture, much light has been thrown on the successful cultivation of the Sugar-Beet. These experiments first began in 1911 and 1912, in Morayshire. They were resumed in 1923 and 1924 over a much wider area, and on a more extensive scale. It has been found that the most suitable place in the farm rotation for such a crop is the Potato break, and it will be for growers to consider whether it would be more profitable to grow, say, ten to twelve tons per acre of Sugar-Beet at the minimum contract price now offered than to grow Potatos at fluctuating prices. The College experiments have shown that considerable skill and care are required for the successful growing of Sugar-Beet. The total cost of manuring is approximately £3 per acre.

British Plants at the Royal Horticultural Hall.—Dr. G. Claridge Druce's exhibit at the Royal Horticultural Society's meeting on the 10th inst., consisted of about fifty British plants either described or discovered by him. They included Sagina scotica, Orchis praetermissa, O. O'Kellyi, O. Fuchsii (with several hybrids), Plantago Edmonstonii, Bromus interruptus, Rosa Rothschildii, Saxifraga Druce Marshall, from Brandon Mountain; Centaurea Drucei, Britton; Sedum Drucei, Graebner; Taraxacum Drucei, Dahlst, Kenmare, Wicklow; Thymus Drucei, Ronn. Ben Lawgh, etc.; Crepis Drucei, Marr, Berkshire; Potamogeton Drucei, Fryer, Berkshire; Bursa Druceana, Almg. Mentha rubra Drucei, Briquet; Spergularia atheniensis, Orobanche Ritro, Agrostis verticillata, Koeleria vallesiana, Thymus zetlandicus, Montia lamprosperma, and Potamogeton Scemenii.

Mr. H. Prentice.—For rather more than ten years Mr. H. Prentice acted as gardener and sub-agent to Mrs. Gordon Canning, at Hartpury House, Gloucester, and during that period became a most successful competitor at provincial shows, and on several occasions exhibited fine collections of fruits at the meetings of the Royal Horticultural Society, at Westminster. From Hartpury House Mr. Prentice proceeded to Biggleswade where he became superintendent of the training centre under the Bedfordshire County Agricultural Committee at Stratton Park, and during his five years stay there he made a name for himself as a landscape gardener and became well-known for his wide knowledge of trees and shrubs. During a considerable part of that time he also acted as Secretary for the East Bedfordshire Growers' Association. Mr. H. Prentice left Biggleswade to take up his new appointment as Parks Superintendent to the Bexley Heath Urban District Council. He entered upon his new duties on the 9th inst. and his appointment has special reference to the laying out and improvement of Danson Park, Welling, a beautiful wooded area of some 203 acres recently acquired by the Bexley Heath authorities. As Danson Park is only one mile outside the Woolwich boundary and ten miles from London Bridge it promises to become one of the most popular open spaces in the south-east district of London. It contains fine Oaks, Poplars, Beeches and Elms and an avenue of Wellingtonia gigantea; the park includes a lake twenty acres in extent and ample provision will be made for recreation and sports grounds. We congratulate Mr. Prentice upon his appointment and Bexley on acquiring the beautiful open space of which he has recently taken charge.

MR. H. PRENTICE.

Glasgow Flower Show.—The flower show promoted by the Glasgow and West of Scotland Horticultural Society, in conjunction with the Corporation of the City of Glasgow, will be held in Kelvin Hall, on Tuesday, Wednesday and Thursday, September 1st., 2nd, and 3rd. The schedule has been issued and copies may be obtained from the Secretary, Mr. J. Carrick Kerr, 46, Gordon Street, Glasgow. The principal prizes include a sum of £90, in three awards, for the best rock- or rock-and-water garden; £90 given in three prizes for pot plants arranged for effect on the floor; £21 in four prizes for Roses, besides a challenge cup presented by Lady Weir, of Eastwood; £14 in four prizes for Sweet Peas; £18 for perpetual-flowering Carnations; £20 for a decorated table of fruits, a second prize of £16, a third of £12, and a fourth of £8; and £28 in four prizes for eight bunches of Grapes. The show will be opened by Lady Maude Carnegie.

Southport Floral Fête.—The schedule of the Southport Flower Show for Wednesday, Thursday, and Friday, August 26, 27, and 28, is before us and is even more comprehensive than the one of the initial show last year. The value of the cash prizes, trophies, medals, etc., is over £2,900, and in certain of the classes the amount of money allotted for prizes is amongst the largest offered in this country. For instance, the cash prizes offered for rock and water gardens amounts to £190, besides gold, silver-gilt, and silver medals. The classes for groups of plants carry with them very large prizes, the one for foliage and flowering plants having, beside a silver challenge trophy valued at £50, sums of £50, £40, £30, and £25 respectively in four prizes. Classes have been arranged by the National Viola and Pansy Society, the North of England Pansy and Viola Society, and the West Lothian Pansy and Viola Society, so that growers of these popular flowers will have an opportunity of competing and estimating the worth of the newer varieties in comparison with the old standard sorts. The Ormskirk Potato show having been abandoned this year, a special class will be included at Southport for a collection of immune varieties of Potatos. In this connection, the National Institute of Agricultural Botany and the Ormskirk and District Potato Society will stage an educational exhibit of immune varieties of Potatos and of Potatos attacked by wart disease. The show this year will be arranged in one large marquee covering more than one-and-a-quarter acre of ground.

Kew Guild Journal.—The *Journal* of the Kew Guild for 1925 shows, in the list of horticulturists whose obituary notices are published under "In Memoriam," that Kew men occupy some of the most important positions in the horticultural world. Foremost amongst her sons whose loss Kew has had to mourn during the past twelve months are Dr. W. Botting Hemsley, who rose from a gardener to the very highest position as a systemetist and botanical author; Mr. William Browne, for many years superintendent of Hyde Park; Mr. R. Irwin Lynch, the renowned Curator of Cambridge Botanic Garden; Mr. J. A. Gammie, who served for thirty-two years in India, and was not only a clever gardener and botanist but an ornithologist and entomologist of repute; Mr. Francis Garrett, who was one of the finest practical gardeners ever associated with Kew; Mr. Norman Gill, for many years superintendent of the Government Gardens, Kumaon, India; and last, but not least, Mr. William Watson, whose name is familiar to horticulturists the world over. Portraits of all these distinguished horticulturists, save that of Mr. Watson, are published in the *Journal*, together with short biographies. A portrait of Mr. Morley T. Dawe, President of the Guild for 1925, forms a frontispiece to the *Journal*. In "Notes and Gleanings" it is stated that no fewer than 1,535,855 persons visited Kew in 1924, an increase of 332,458 compared with the previous year, and we are pleased to learn that Mr. W. J. Bean, Curator of the Gardens, has been appointed by His Majesty the King a Companion of the Imperial Service Order. There are the usual letters from old Kew men from various parts of the Empire and a very interesting account of the Botanic Gardens at Singapore by the Director, Mr. I. H. Burkill, accompanied by some striking illustrations of the gardens. Accounts of the annual general meeting, annual dinner, doings of the various sports clubs, The Mutual Improvement Society, the lectures, appointments and retirements will be read with interest by all members of the Guild, especially those in the distant parts of the world.

British Mycological Society.—This Society's spring foray will take place at Tintern on April 24 to 28, and the spring foray for London students on May 9. The phytopathological meeting will be held at Cambridge on July 4, and the autumn foray and annual meeting at Dublin on September 21 to 26. The autumn foray for London students is fixed for October 10, and a foray with the Essex Field Club on October 17, and one on October 24 with the British Ecological Society. The concluding meeting of the year will be held in London on November 21.

Small Fruits in 1924.—Some interesting data regarding the production of small fruits in 1924 are published in *Agricultural Statistics* issued by the Ministry of Agriculture. It is estimated that the total production of Strawberries last year was 830,000 cwts. or about 80,000 cwts. more than in 1923. The yield of Raspberries was quite fifty per cent. heavier than in 1923 and the total production is estimated at 170,000 cwts. against 96,000 cwts. in the previous year. Gooseberries also showed an increased yield, the production of 600,000 cwts. being 46,000 cwts. more than in 1923. Black Currants yielded 24 cwts. per acre compared with only 16½ cwts. in 1923 and as the acreage of this fruit was also increased the total production in 1924 amounted to 275,000 cwts. against 130,000 cwts. in 1923. In the case of Red and White Currants there was a reduced crop, only 75,000 cwts. compared with 107,000 cwts. in the year previous.

Allotments.—Returns collected by the Ministry of Agriculture show that the area covered by allotments in England and Wales is about 170,000 acres. It is estimated that about half this area was planted with Potatos in 1924 and the production of Potatos on allotments may therefore be estimated at about 510,000 tons. This is in addition to Potatos grown in gardens, which form an appreciable quantity, but there are no means of estimating the total amount.

Appointments for the Ensuing Week.—Wednesday, April 1.—Royal Agricultural Society of England Council meeting; National Viola and Pansy Society's meeting. Thursday, April 2.—Nottingham and Notts. Chrysanthemum Society's meeting. Friday, April 3.—Manchester and North of England Orchid Society's meeting; Dundee Horticultural Society's lecture. Saturday, April 4.—Blackburn and District Hort. Society's lecture.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Vinery and Cow-house.*—I have just started something novel in a glazed cow-house, which it has occurred to me you might like to hear of. The cow-house is ninety-six feet long, span-roofed, the roof being made the same as for slating, but the rafters (supplied by Mr. Lewis, of Stamford-hill), rebated. It is glazed with Hartley's patent rolled plate in panes, twenty-four inches long by twenty-nine inches wide, so that it is very light. An iron bar is run across midway between the ridge and the eaves, to supply the place of a purlin. The roof cost a few more pounds more only than slate. Very ample ventilation is provided for, all round the house, by a ventillator along the whole ridge. Vines are planted in front of the house at every two feet (the distance between the rafters), and it is presumed that the shade from these, and an abundant supply of fresh air will prevent the cattle from suffering from heat, even in the height of summer. There will not be much escape of ammonia, as gypsum diluted with sulphuric acid will be used on the floor; and if some little does rise, probably it will be of service to the Vines. I have been a good deal twitted as to how I mean to prevent the farm people from helping themselves to the Grapes, but with an honest cowman who may keep the key in his pocket, that is surely an easy matter. For the first two years, until the border Vines bear, the house will be supplied with pot Vines. *Llandilo. Gard. Chron. March 30th, 1850.*

ALPINE GARDEN.

SCOLIOPUS BIGELOVII.

This interesting plant is a native of California, being found in the coast ranges from Humboldt County to Marin. There are only two species in this genus, the one here illustrated, and the little known S. Hallii from Oregon. It belongs to the tribe Medeoleae of Liliaceae and comes into flower early in March. S. Bigelovii (Fig. 85) was introduced into cultivation in Europe by Messrs. Haage and Schmidt, of Erfurt, in the year 1879. It is a dwarf, herbaceous perennial, each plant producing two ovate leaves which are about two inches long at flowering time, but develop afterwards up to about eight inches in length. In colour they are dark green above, with black blotches, and paler beneath. The flowers are produced singly on mottled stems about two inches long, and are about one inch across. The sepals are spreading and recurved, ovate in outline, white, closely striped with red-brown, while the three petals are erect, linear, and of a red-brown colour.

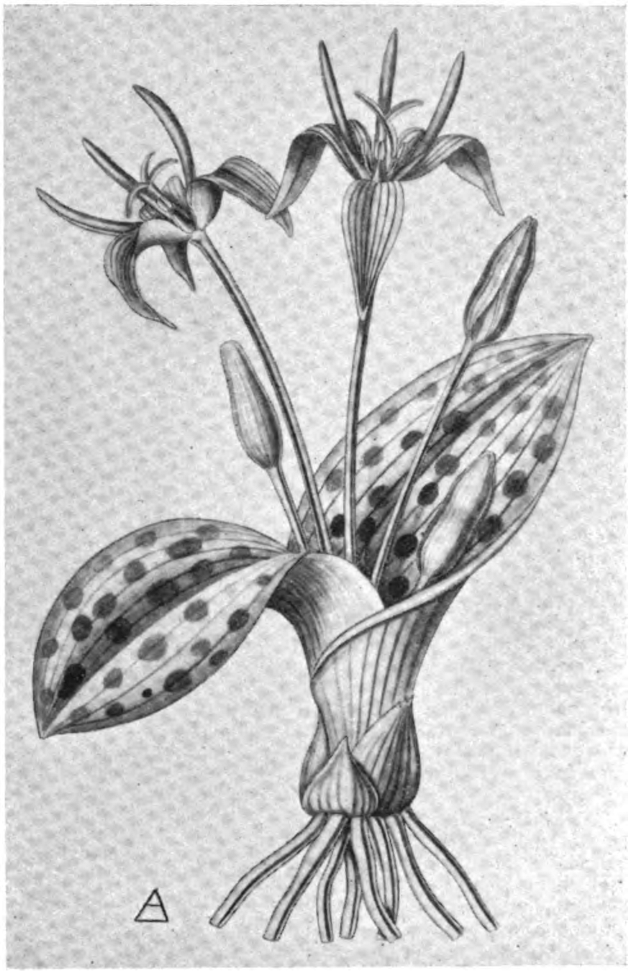

FIG. 85.—SCOLIOPUS BIGELOVII.

Quite hardy in shady, sheltered positions, planted in soil which contains plenty of humus, this singular plant is well worth a place in the rock garden, and it is also useful for the Alpine house, although its curious scent, which has been described as being like that of decaying seaweed, is not attractive. It may be increased by means of division while at rest, and also by means of seeds, which are sparingly produced. *W. I.*

NIEREMBERGIA RIVULARIS.

Known sometimes as the Cup-flower, Nierembergia rivularis is one of the most exquisite of all dwarf plants, but it is rarely seen grown to perfection. It is hopeless to attempt to grow the plant in a cold, stiff soil or in a shady place, nor will it flourish in a dry, sandy compost. It delights in fullest sun, but it also calls for plenty of moisture; a moist, sandy soil in full sun suits its fullest requirements. It will frequently die out in dry soil. Nierembergia rivularis is a charming plant for moist, sunny places near the base of the rockery work where it soon forms good carpets of pretty leaves and produces large pure white flowers.

Where it does well N. rivularis is a truly exquisite plant. It is lovely in the alpine house also, and one of the best cultivators I have ever known cultivated it in flat pans with the lower two inches of the pan plunged in a dish of water.

This lovely Nierembergia is fairly hardy in the milder parts of the three kingdoms and may be propagated by division or by means of seeds, which should be sown under glass in the spring; seeds, however, are not easy to obtain. *S. Arnott.*

PRIMULA WINTERI.

This is one of the most precocious of the Himalayan Primroses, being in full flower in the rock garden before some members of the genus show signs of active growth. Dwarf and compact in habit, it is a charming plant, with the rosettes of foliage and calyces densely coated with farina.

The solitary flowers, borne on slender pedicels, are one-inch in diameter and coloured Lavender, with zones of white and green. Like the majority of Himalayan Primulas, P. Winteri is a moisture-loving plant, and flowering so early in the season, a sheltered position should be selected for it. *Fred. W. Jeffery.*

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Vandas.—Plants of the Vanda tricolor and V. sauvis section are growing freely, and should receive a little extra water at the roots. These tall-growing plants require to be protected from strong sunshine at all times or they will lose a number of their lower leaves. Every precaution should be taken against injury by drip from the roof which is likely to cause an accumulation of moisture at the base of the foliage, resulting in decay. The terete-leaved Vandas comprising such kinds as V. teres, V. Miss Agnes Joaquim, and V. Hookeriana have been resting for some time past, and with the increased sunshine and more atmospheric moisture are commencing to grow afresh. In order to cause them to bloom freely they should be placed in a position in the warmest house, where they may be exposed to all the sunshine available and syringed frequently. The flower spikes should soon be appearing, and so soon as the blooms are developed they should be protected from the sun or they will lose their bright colourings.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Asters.—The modern development of this handsome flower furnishes our gardens with tall, medium, and dwarf varieties in almost endless diversity, with a range of colour to suit every taste. It is not wise to rely on a single sowing; to provide early plants a first sowing may be made now in boxes or pans. Sow thinly in a light, sandy compost, cover the seeds lightly with fine soil and the boxes with a sheet of glass to prevent evaporation of moisture. Asters should not be subjected to excessive heat at any stage of their growth, and a cool greenhouse is a good place in which to germinate them. A later sowing may be made on a partially-spent hot-bed or even in a cold frame.

Galtonia candicans.—Bold groups of these graceful plants are attractive, either in the shrubbery border or in the mixed border, in association with Gladioli and Montbretias. On light soils it is quite safe to leave them in the open ground, but bulbs which have been lifted should now be re-planted.

Sweet Peas:—A sowing of Sweet Peas may now be made out-of-doors in trenches prepared in the early winter. It is not wise to sow while the soil is very wet, and to help the superfluous moisture to escape and bring the soil to a nice tilth the cultivator should be drawn through the surface frequently. When drawing the drills it is wise to make them a little deeper than is necessary for sowing so as to leave a slight ridge on each side to serve as a protection for the young plants in their early stages of growth. Sow the seeds thinly and cover them to a depth of about two inches with old soil from the potting shed.

Lobelia.—Owing to the excellent and uniform results obtained with seeds of modern varieties of Lobelia, propagation by means of cuttings is not generally practiced now and raising plants from seeds is relied on. The seeds should be sown now in well-drained seed-pans, using a light, sandy compost. Make the surface firm and even, and scatter the seeds thinly without covering them. Cover the pan with a sheet of glass, place it in brisk heat and shade from sunshine until germination has taken place.

Polyanthus.—Seeds of this desirable spring-flowering plant should be sown now and the seed-pans placed in a cool house or cold frame. Like those of many other Primulas, the seeds of Polyanthus germinate slowly and irregularly and later sowings frequently fail to produce plants of sufficient strength for permanent autumn planting.

Helleborus.—These useful winter and early spring-flowering plants thrive in a partially shaded position in a soil rich in humus. The less the roots are disturbed the better, hence replanting should only be done when the crowns have become overcrowded, and when this is necessary it should be done in early spring. Plantations which need no re-planting should receive a liberal top-dressing of old manure at this season, as the new roots are developing.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Polygonum capitatum.—This pleasing perennial is not generally grown indoors, yet it is suitable for furnishing baskets and vases. The foliage is beautifully marked, reminding one of the old Tradescantia discolor in appearance, and when maturing it takes on a striking crimson colouring.

Perpetual-flowering Carnations.—Young plants of perpetual-flowering Carnations which were raised from cuttings rooted in January and, presumably, now growing in three-inch pots, should be ready for potting on. An important point in Carnation culture is that the plant should not be allowed to become pot-bound at any stage prior to transferring it to a pot in which it will flower; neither should it be over-potted. Assuming the plants are to be flowered in seven-inch receptacles, pots of five-inches diameter should be used at this potting. The soil should consist of four parts good, sandy, fibrous loam, one part old hot-bed manure, a free addition of old broken mortar rubble, some fine-grade oyster shell, wood ash, and coarse sand, according to the texture of the loam, and a sprinkling of Carnation manure—say, a small, sixty-potful of the last to each barrowload of soil. The compost should be passed through a half-inch riddle, rubbing the loam through the sieve, so as to obtain as much fibre as possible. If the compost is prepared a week or so before it is required, opportunity will be afforded to bring the soil to a proper consistency before use. Whilst it should never be used in a pasty condition, neither should it be in an over-dry state at potting time, otherwise the potting cannot be performed satisfactorily. After this date the plants may be grown in frames, with a layer of ashes at the bottom. If, however, house-room has still to be utilised for the plants, the coolest and lightest possible situation should be afforded them. Cuttings rooted later make more rapid progress than those inserted during the first few weeks of the year, so that the February-rooted cuttings, given proper treatment, should, at the end of the present month, be no more than a fortnight behind the early New Year batch, and may also be destined finally to occupy the seven-inch-sized pots. For the March-struck cuttings, six-inch receptacles will be large enough to flower these in, so that the sizes of pots for the intermediate shifts may be determined upon accordingly.

Stopping Perpetual-flowering Carnations.—Attend to the first stopping of these latest-struck cuttings. Although the method of stopping has been fully explained in a previous calendar, it may be well to repeat that the stopping of a weak plant does not necessarily strengthen it. The aim should be to produce a healthy, vigorous plant, and to stop it only when it is growing freely, and never at the time of potting, but rather some ten days or more before or after this operation. At the first stopping, the complete top of the plant, with at least one pair of fully-developed leaves, should be either cleanly broken or cut away, retaining some five or six pairs of fully-developed leaves.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Peaches and Nectarines.—Peach and Nectarine trees in all stages will now require daily attention. Where fruits have set freely and are swelling, all badly placed specimens should be removed and those in clusters reduced to the best. In many cases a certain number of fruits will develop faster than the others and the small ones may be picked off at once. Healthy Peach trees may be allowed to carry one fruit per square foot of branch area, leaving them a little closer in the case of Nectarines. Should the trees not be in the best of health crop accordingly. Much time and attention should now be given to tying in the young shoots, bearing in mind that they are to carry next season's crop. Syringe the trees thoroughly, wetting the leaves well on the under side with tepid water twice a day, viz., early morning and again at 2 p.m., closing time. The sun is rapidly gaining power, causing the temperature of the house to rise quickly and air will require to be admitted soon after seven a.m., slightly at first. Open the top ventilators freely during warm days. Keep the front ventilators closed in the early houses for some time to come, otherwise mildew may put in an appearance, especially on Royal George Peach. Should mildew be suspected dust the trees with green flowers of sulphur. Keep the borders moist. A sprinkling of artificial manure on the border will greatly assist fully matured trees at this stage. I arrange a four-inch mound of clay around each tree, five feet from the stem, to hold the water, and feed both with artificial and liquid manure. A night temperature of 55° and a rise of 10° in the day is sufficient warmth for the present. Use as little fire-heat as possible. Should green-fly make its appearance fumigate the house lightly with XL ALL compound, making sure that the foliage is perfectly dry and the temperature lowered a little. See that the Strawberries growing on the shelves of Peach houses are kept well supplied with water and quite clear of insect pests. Bring in the latest Strawberry plants to be forced gently this season.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Woolly Aphis.—American Blight is one of the most troublesome pests with which the fruit grower has to contend and it is very difficult to eradicate once the trees are attacked by it. It may be dealt with fairly successfully on trained trees, but when it attacks standard Apples it appears to be beyond control, for although sprayings may destroy it on the affected parts of the branches, in a few warm days it appears again on some other part of the tree. When the weather becomes dry and warm in early spring Woolly Aphis commences to increase and does so, more or less, all through the summer. Drastic measures should be taken to destroy the pest when it is first detected, but in the early part of the year other work is very pressing and the destruction of American Blight gets neglected, with the result that the pest gains a firm grip of the trees. Spraying may be resorted to when the trees are in a dormant state, but after the flowers begin to open spraying should be stopped and methylated spirits applied with a small brush. The best specific I have found is the following: One pint of of gas tar, one pint of Stockholm tar, half-a-pint of soluble paraffin, mixed together and made to the consistency of paint. The mixture is applied by means of a small paint brush when the winter pruning is commenced, all cankered parts, crevices and wounds being dressed with it. This mixture may be applied any time of the year provided the operator is careful with the brush. I have used the above remedy for three years with splendid results.

Apple-leaf Sucker.—Where this pest is allowed to spread it destroys the foliage, often ruining the crop and the branches as well. Keep a sharp watch for the insect and spray with nicotine or an orchard spray before it spreads. Spraying is best done on a fine, quiet day. I am pleased to observe that Ladybirds have increased in numbers the last few years; it is surprising the number of injurious insects they destroy in a short time.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Vegetable Marrows.—Sow seeds of Vegetable Marrows to raise the main batch of plants for setting out later. Sow the seeds in large sixty-sized pots, placing two seeds in each receptacle. Place the seed pots in gentle heat and let them remain there until the seedlings are well through the soil, then gradually give the plants cooler treatment until they are hardened suitably for putting in the open. The plants may be placed in their permanent quarters when all danger of late spring frosts is over. Marrows raised from seeds sown a month ago and kept growing in heat are ready for planting in heated frames in which they are intended to be cropped.

Broccoli.—Attention should now be given to this useful winter vegetable. Remove all decayed leaves from the plants and hoe the soil when the weather is favourable. The present is a suitable time to sow seeds for next season's supplies and also of the purple-sprouting Broccoli.

Aubergines.—Sow seeds of this vegetable and when the seedlings appear place them near to the roof-glass in a warm house and keep them growing steadily in heat until their final potting. There is sometimes difficulty in finding room for a large batch of these Egg-plants in pots in greenhouses. I would suggest if frames are available in a sunny part of the garden to plant out the Aubergines when they are large enough in eighteen inches of good soil placed on an old manure heap. Excellent results may be obtained by growing the plants in this manner.

Celeriac.—This vegetable forms a welcome change to Celery, and should be more widely grown in England than is now the case. Seeds may be sown in pans in a temperature of 60°, pricking the seedlings off into boxes or frames when they are large enough, and finally hardening them off for planting out-of-doors.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penarth, Westmoreland.

Yews.—Now is a suitable time to plant these evergreen trees. If a hedge is to be planted a trench should be taken out at least twenty-four inches wide and eighteen inches deep. These measurements will be found to give ample room for planting specimens three feet in height. Should the soil require enriching some well-rotted manure may be spread over the bottom of the trench and dug in before planting; crushed bones may also be sprinkled in the soil as it is worked around the plants. Yew trees received from the nursery require immediate examination on arrival, and if the roots are found to have become at all dry during transit they should be soaked thoroughly with water. Make the plants firm, and from time to time examine them to see that none has worked loose at the neck through the action of wind.

Vase Plants.—These now call for a little extra attention if good specimens are to be ready for placing in the vases later. Geraniums, Fuchsias, Heliotropes, etc., may now be transferred to larger pots and grown on in order that they may be fine specimens when planted in the vases. If the soil in the vases is exhausted it should be removed and fresh compost substituted. At the same time put the drainage in an efficient condition.

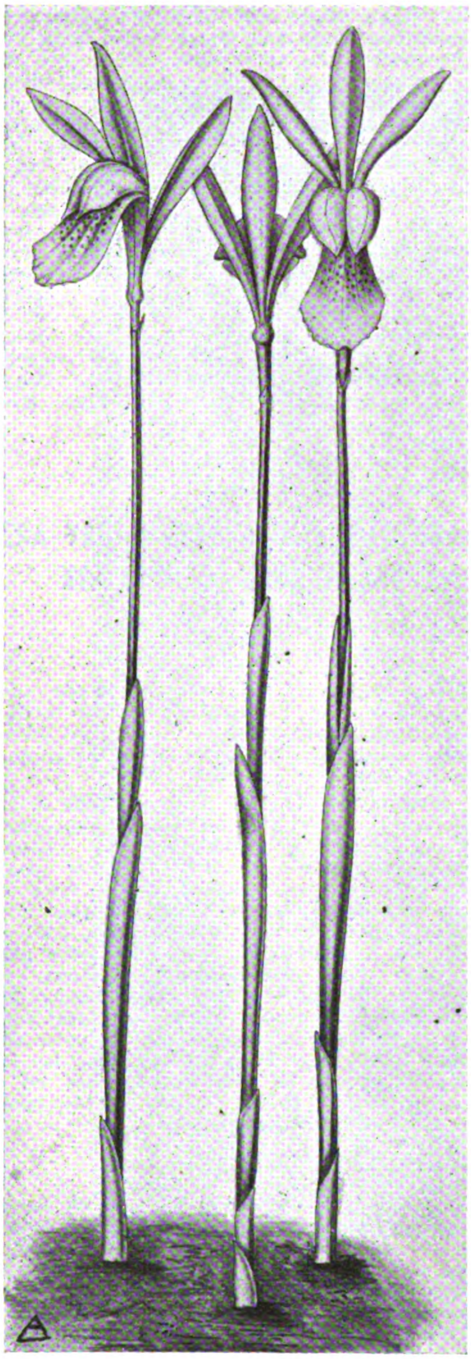

FIG. 86.—ARETHUSA BULBOSA.

Border Carnations.—Layers that have been wintered in frames may now be planted out where the plants are intended to flower. The shoots are of a brittle nature, and care must be exercised when planting. Make the soil thoroughly firm around the ball of the plant with the fingers, and do not plant too deeply.

ORCHID NOTES AND GLEANINGS.

ARETHUSA BULBOSA.

This species belongs to a small genus of terrestrial Orchids, the genus being founded on the plant illustrated in Fig. 86. Arethusa bulbosa is a native of Carolina, North America, and in Gray's *Botany of North America* it is described as being somewhat rare in its native habitat, and, indeed, it is extremely rare in cultivation, although it is well figured and described in the *Bot. Mag.*, t. 2204. In its native state it is said to attain a height of twelve inches to twenty-four inches, but under cultivation it usually grows from eight inches to twelve inches tall. The sweetly-scented, rosy-purple flowers, with a yellowish band on the lip, are terminal and solitary: as the illustration shows, no leaves are produced at the time of flowering; the single leaf is developed subsequently.

The plant grows naturally in boggy ground, and under cultivation should be given a position in the rock garden, giving preference to a moist, shady spot, with a north aspect. It is also desirable to afford protection by means of dry leaves during the winter. This plant is best grown in a compost consisting of good, medium loam, chopped Sphagnum-moss, leaf soil, or peat and sand. It is also likely to succeed if grown in pans, in a cold frame, or in a small, unheated house. *J. C.*

CYMBIDIUM GOOSANDER.

When first shown by Lt. Col. Sir Geo. L. Holford, K.C.V.O., C.I.E., on February 10, when it gained a First Class Certificate, the beauty and distinct character of the lip of this fine hybrid between C. insigne and C. Merlin attracted much attention. All the Cymbidiums of its class are beautiful but rather uniform in the character of the lip. C. Goosander is a distinct departure, its large labellum being crimped at the margin and with the side lobes enlarged, presenting the appearance of some hybrids of Cattleya intermedia.

Several of these hybrid Cymbidiums have large white or pearl-white flowers with pretty dotted lines on the lip, which shows the same broad development as in the first example.

C. Merlin was raised from C. Alexanderi × C. Dryad (insigne × Parishii Sanderæ) and it is to the fine form of C. Parishii that the change in C. Goosander may be traced.

HABENARIA MILITARIS AND H. RHODOCHEILA.

Although Habenarias usually flower in summer the group of these Orchids exhibited by Messrs. Charlesworth and Co. at the meeting of the Royal Horticultural Society on the 10th inst., contained a few of these bright scarlet, tropical, terrestrial Orchids in bloom and they served to draw attention to a very showy section of a genus fast vanishing from gardens and which might be renewed if those who have these Orchids would raise fresh stock from seeds.

The plants thrive best grown singly, in long thumb pots and arranged as though they were in rocky deposit between the stones, as in their native habitats. In potting them each cluster of tubers should be held in position with the ends resting on the crock at the bottom of the pot, and the lower half of the tubers covered with finely broken crocks. The compost may then be inserted in the pot, first a thin layer of Sphagnum moss, then a mixture of peat, loam fibre and fine crocks, leaving the growing point of the plant on a level with the surface. When growth commences, increasing supplies of water should be given, and the plants grown on a shelf in a warm, moist house. After flowering the foliage withers and the plants should then be placed on a shelf in a warm, intermediate house and kept dry until they commence to grow afresh and need re-potting.

INDOOR PLANTS.

STREPTOSOLEN (SYN. BROWALLIA) JAMESONII.

This free-flowering, indoor plant is one of the prettiest and most useful climbers we possess; its neat habit of growth and free-flowering qualities render it invaluable for covering pillars, rafters or trellis work against bare walls of a cool conservatory or greenhouse. The neat habit of growth makes it especially useful for planting out where space is limited. It is continually in flower from May to September, producing in great profusion moderate sized clusters of bright orange flowers that change to a brilliant cinnabar-red colour.

The plant is of branching habit, furnished with deep green, oval leaves and forms a flower bud at the end of each shoot, making a fine display. It does well grown in a light, airy position where the bright mid-day sun will not reach. If planted in a very sunny, dry position this Streptosolen does not flower well and is subject to attacks of red spider, which causes the foliage to turn a yellowish colour and ultimately drop. Streptosolen Jamesonii should not be allowed to get dry at the roots during the growing and flowering season, but in the autumn, when it has done blooming, water should be withheld gradually and in the winter only just sufficient moisture used to prevent it shrivelling. Before the plant starts into growth in the spring all weak shoots should be cut out and the strong ones shortened. When in full growth and flowering freely the roots should be given a little liquid manure once weekly; this will give vigour to the plant, while the foliage will develop a brighter green and the flowers assume a richer colour.

Before planting, be careful to see that the border is well drained, otherwise the soil will become sour and sodden. The soil should consist of a mixture of good, rough, turfy loam, one-third fibrous peat or leaf-mould, with silver sand added.

This Streptosolen makes a valuable pot plant for growing in a miscellaneous collection of plants in the greenhouse or conservatory. It should not be allowed to get pot bound, otherwise growth will be stunted and not flower to perfection. When increased root-room is necessary, shift the plants into a pot one size larger, but under no circumstances use large pots.

This is also a most useful plant for dotting amongst a miscellaneous collection of plants in the open during the summer. Specimens for this purpose require to be grown for a season or two to get them to a flowering size. The plants should be plunged in the ground in their pots and at the end of the bedding season taken up and stored in a cool part of the greenhouse or some place with a temperature of 40° to 45° where frost will not reach them. They should not be allowed to start into growth until the spring, when they will require repotting in fresh soil, removing the old, loose compost of the previous season. Be careful not to over-pot them and, if possible, place them in receptacles of the same size or a size smaller, then place them in gentle warmth with a little air to prevent them throwing out weak, spindle shoots. When well rooted harden them off gradually before planting them out in the beds. With care the same plants will do duty for several seasons. This plant is propagated easily from cuttings made of half-ripened wood early in the season and placed in a little bottom heat either in a hand-light or frame. As soon as they are rooted put them in small pots and re-pot them as required. Keep them in a temperature about 55°, with atmospheric moisture; if grown on, plants raised in this way will flower in the autumn of the same year. They may be trained as pyramids or standards.

PLUMBAGO CAPENSIS.

This is another quick-gowing and free-flowering climber and a fit companion to the Streptosolen. It produces large heads of pale blue flowers with freedom. The Plumbago requires similar treatment to the Streptosolen, when grown as a greenhouse climber, for growing in pots for decoration of the conservatory, for plunging outdoors in miscellaneous beds or for plunging in batches in borders.

If grown on with strong, single stems until they reach three and a half feet to four feet in length, they will form standards with handsome heads and flower freely, being very ornamental in this style either for the conservatory or outdoor decoration during the summer. If grown in pots for the conservatory give them a little liquid manure once a week just as they are coming into bud and flower, to keep the foliage in a healthy, green condition. In the autumn the plants may be placed in a cool part of the house, free from frost, and they will need only sufficient water to prevent them from shrivelling. This treatment should be continued until the following spring, when they should be pruned to make compact heads and be re-potted if required, or top-dressed before starting into fresh growth. Plumbago capensis alba, the white form, does well and flowers freely under similar treatment. *John Heal, V.M.H.*

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

SALVIA COCCINEA.

This half-hardy annual grows about two-and-a-half feet high and produces bright, scarlet flowers. It is very useful for greenhouse decoration, especially during the autumn or late summer.

If required for spring flowering seeds should be sown about the middle of September, giving the young plants the usual cultural attention required by this class of plant. As it is a slender-growing species three or four specimens may be placed together in a six-inch pot for flowering purposes. Where required for autumn-flowering, the seeds may be sown about the beginning of June. In their initial stages the young plants are best grown in cold frames, but when they are established in their flowering pots, the frame lights may be removed altogether or the plants may be stood in the open on a bed of ashes. Salvia coccinea grows freely in any good potting compost.

SALVIA CARDUACEA.

This pretty Californian species of Salvia is well worth growing for the small greenhouse, as it only attains a height of about one foot. It is a distinct and charming plant with a rosette of Thistle-like leaves and pale lilac or lavender-coloured flowers.

Seeds may be sown in a cold frame or cool house about the middle of September, and the seedlings pricked off, when they are fit to handle, into thumb pots. Their next shift should be into sixty-sized pots in which they should be wintered. Use a well-drained compost, as, in common with most Californian plants of this class, Salvia carduacea is liable to suffer from damp during the winter, for which reason the plants should be grown on a shelf near to the roof-glass in an airy greenhouse. During the winter water should be afforded the roots with the greatest care.

Early in the New Year the plants should be transferred to five-inch pots in which they should be flowered, or several plants may be placed together in shallow pans.

SALVIA FARINACEA.

This is another half-hardy annual with light blue flowers, that might be more generally grown for autumn decoration in the conservatory; there is also a white-flowered variety.

It is a strong-growing plant and attains a height of three feet. To obtain stock for flowering in late summer and autumn the seeds should be sown about the middle of May, either in a cool greenhouse or cold frame. When fit to handle the seedlings may be pricked off into boxes or pans, afterwards transferring them to small pots. Their subsequent cultivation consists in potting them on as they require it until they are in seven-inch pots, in which sized receptacles they may be flowered. During the summer, in their young stages, they may be grown in cold frames. When placed in their flowering pots they are best stood in the open on a bed of ashes. This Salvia requires plenty of water at the roots when well established, and a neat stake should be placed in the centre of each plant, for if not secured the shoots are apt to get broken by high winds; the plants may be removed to the conservatory about the middle of September. Salvia farinacea grows freely in any good potting compost.

SALVIA PATENS.

This beautiful blue-flowered Salvia is a half-hardy perennial with a tuberous root stock; for our present purpose we may, however, regard it as an annual, for plants raised from seeds sown indoors during February or early March are often used for summer bedding.

For our purpose sowing is best deferred until the beginning of May, as the plants are required for autumn flowering. It succeeds perfectly if given the same treatment advised for Salvia farinacea. There is a good white-flowered variety of this popular Salvia, which is deserving of more general cultivation, as it is useful for grouping with the blue-flowered type. *J. Coutts.*

SOME WOODLAND POPPYWORTS

In our woodland gardens we have a few plants which, being allied to the Poppies, may be grouped under the term, Poppyworts. All but two species of Meconopsis are perennials, and for the most part they enjoy a cool and friable vegetable soil that is well drained. Full shade is not desirable. but most of those alluded to will succeed in only partial sun, and do not seem to object to tree-drip.

The earliest to bloom is the Canadian Bloodroot, Sanguinaria canadensis. It thrusts its twin leaves out of the soil in the form of a glaucous, purplish scroll when the Wood Anemones are in bloom, and no sooner are they unfurled than the flower bud which they sheathed expands into an inch-wide blossom, saucer-shaped and milk-white, save for the central tuft of gold. This plant seems to resent root disturbance and is best planted as pot specimens. It is impatient of drought and needs peat or leaf-mould to ensure uniform coolness at the roots. There is a form with larger flowers than the type. Though the blossoms of S. canadensis are soon over the leaves are very beautiful, being shaped somewhat like a Vine-leaf and of a curiously soft, glaucous-green suffused with a suggestion of Plum-red when young.

Stylophorum diphyllum, an herbaceous perennial, is a Poppywort that may be described as a glorified Greater Celandine (Chelidonium majus) for it has the same downy, Pea-green leaves, that are roundly lobed, and hairy, branching stems and nodding yellow flowers, but the plant in all its parts is three or four times larger than Chelidonium, attaining a stature of two feet. S. diphyllum commences to grow in the early spring and, quickly attaining the flowering stage, continues to bloom throughout the summer. A single plant, or group, planted in leaf-mould in a shady corner, with an occasional top-dressing of old manure in winter, will prove a most charming acquisition. This species was introduced from Western N. America in 1854 as Meconopsis diphylla and was subsequently known as M. petiolata.

The Chinese Eomecon chionantha is a Poppywort of singular charm and after the style of the Bloodroot, but it is an unruly subject, ramping like Coltsfoot in rich soil and often proving a shy bloomer. It would seem that this plant needs root-restriction as well as a thorough rest by drying it off in the late summer, before it will prove satisfactory. But under such conditions it is essential that moisture is not lacking until flowering ceases in summer. The heart-shaped, scalloped, glaucous leaves of E. chionantha are singularly handsome, and the flowers, two inches to three inches across, are pure white with a cluster of yellow anthers.

Cathcartia villosa is a Poppywort of the Himalayas and came from there in 1850, being called after Judge Cathcart of Tirrhoot. Though often considered a greenhouse perennial, C. villosa is reasonably hardy, and though it sometimes fails to be permanent here it is winter wet rather than frost from which it suffers. The pale green foliage, with its golden-brown hairs, may be likened to that of Meconopsis Wallichianum, though the prettily-lobed leaves are a good deal smaller. Above this tuft of leafage branching flower stems, rising to a height of eighteen inches, produce little, yellow, Poppy-like flowers in long succession, and these produce seeds in abundance. There are other species which are said to be easier to cultivate than this one, but these have not yet come my way.

Meconopsis cambrica, the Welsh Poppy, is a delightful plant that can be a positive pest. It is a true perennial and one that will flourish in sunless spots and the poorest of soils; its pretty pale green foliage is among the first verdure to appear in the early spring and the leaves have a distinct charm in themselves. The flowers, which are abundantly yielded from spring to late autumn, are of a somewhat biting citron-yellow, but they are exceedingly elegant and will brighten-up places where few other flowering plants would do so well. The single orange form of M. cambrica is not nearly so rampant a grower as the type; the colour is a warmer and more pleasing tone and in every respect the plant is a most desirable subject for planting in woodland. The double-flowered varieties are very gorgeous but their beauty is not, to my taste, an acquisition to natural surroundings.

The only other Meconopsis which I shall allude to here is M. quintuplinervia, the lovely Harebell Poppy of Northern Tibet, and which was to Farrer "the soundest perennial of the family" and "in well-bred exquisiteness . . . supreme over its race." This is, indeed, a plant of the rarest charm and one that need not give the grower cause for any anxiety, for it seems to prosper in any cool, well-drained, vegetable loam in a position where it is screened from the hottest sun. From a clump of rosettes of long and pointed leaves, bristling with russety hairs, it sends up nine-inch to twelve-inch flowering stems, and in summer each of these terminates in a single, four-petalled, pale-violet, cup-shaped flower centred with a prominent tassel of golden stamens. Well-grown and rightly-placed M. quintuplinervia richly deserves all the praise bestowed upon it by Farrer and others. *J. N., Wales.*

TREES AND SHRUBS.

PRUNUS CONRADINAE SEMI-PLENA.

Prunus Conradinae must be numbered amongst the many beautiful plants that have been inexplicably neglected in English gardens. It was introduced about a quarter-of-a-century ago by Mr. E. H. Wilson, and has proved itself a hardy, quick-growing tree of great merit. This Chinese Cherry opens its white, or pale-pink, flowers well in advance of the Almond, and enlivens our shrubberies during the dreary days of February or early March, when a brave show of blossom is particularly valuable. In Cornwall it was in full bloom this year in the month of January—five or six weeks earlier than in my Kentish garden.

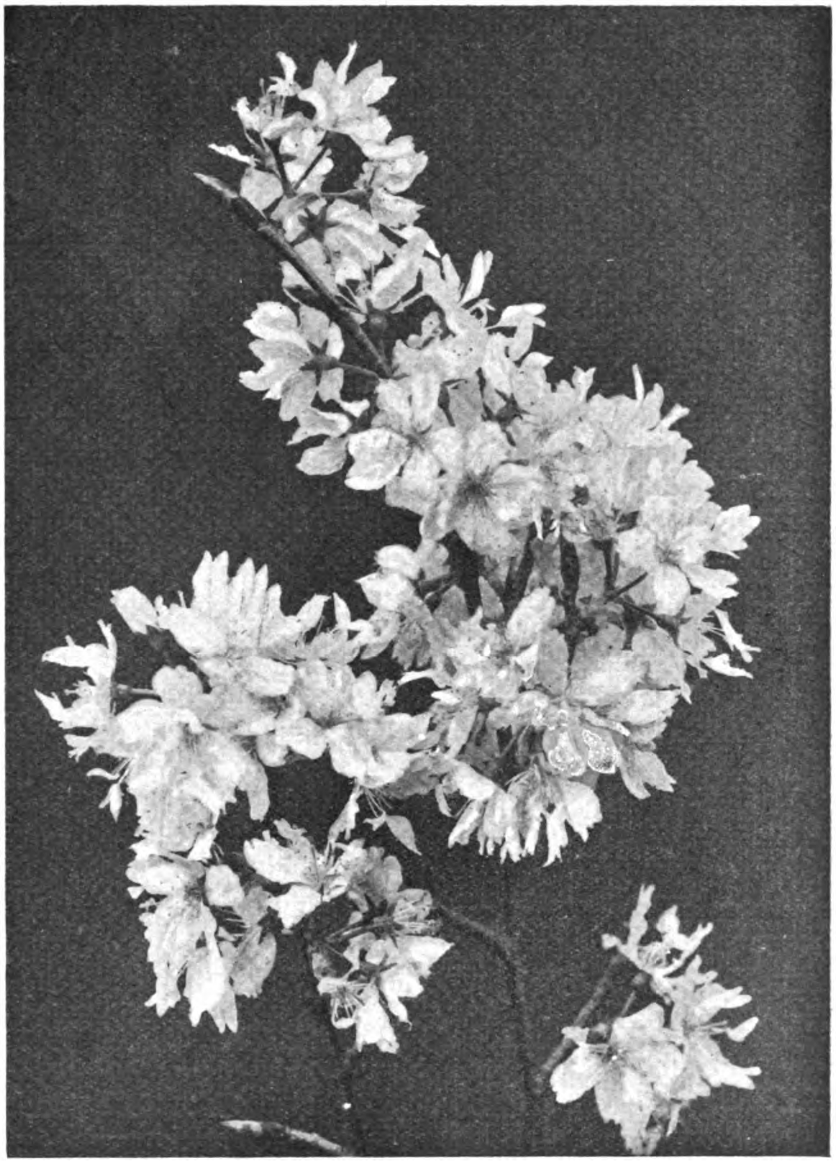

FIG. 87.—PRUNUS CONRADINAE SEMI-PLENA.

This species appears to vary considerably, but the flowers are normally a little over one-inch in diameter. The blossom is borne on the naked boughs in close clusters of four or five flowers, each being supported on a relatively short pedicel.

I am the fortunate owner of a very beautiful, semi-double form—a natural sport—which possesses the great advantage of being able to withstand the buffetings of our inclement spring weather twice or thrice as long as the ordinary single variety with its somewhat fugitive petals. At first the buds of this plant are of a rich, reddish-rose colour, and are then very conspicuous, but they fade to a delicate blush-pink before they open and expose an inner ring of curious, racket-shaped, petaloid stamens. On March 10 I exhibited two small sprays of this Cherry at Vincent Square, but as the flowers were then a week or ten days old, their pristine beauty had gone, and the plant remains unhonoured. It would be a thousand pities if so valuable a tree disappeared into the forgotten limbo of the past—horticulturists have already lost far too many beautiful subjects from the early neglect of newly-introduced plants. Earlier than the Almond, with infinitely finer foliage and more persistent and equally beautiful flowers, this tree at least has an equal claim to be planted in our gardens.

I am informed that Conrad's Cherry may be easily increased by cuttings taken in the late summer and I have no doubt it may also be propagated by grafting on the roots of P. Avium.

The accompanying illustration (Fig. 87, p. 217) does not do the plant justice, as the flowers had been exposed to wind, rain and snow over a week—but, it serves, at any rate, to show its floriferous habit, and gives some idea of its value as a hardy, February-flowering tree. *Collingwood Ingram.*

DAPHNE LAUREOLA.

From the correspondence which has appeared in our pages and observations by numerous arboriculturists it is evident that Daphne Laureola and D. pontica are not infrequently confused one with the other. The illustration on p. 73 certainly represents D. pontica; we were able to obtain a growth of the plant photographed and Mr. Bean identified it as D. pontica. Mr. Bean also identified the specimens of D. Laureola from Instow, one of which was figured on p. 145. These two illustrations we publish again and together (Figs. 88 and 89) so that readers may compare them. Daphne Laureola flowers considerably earlier than D. pontica, and the latter has yellower flowers than the former. In D. pontica the flowers have narrower and more pointed segments than in D. Laureola. Specimens of both species received by us have created a great deal of interest, and one very knowledgable person boldly asserted that Daphne pontica—growth and illustration—was D. Laureola, as he had it in his own garden! If these notes and illustrations help to reduce the existing confusion and uncertainty (horticultural, not botanical) between D. pontica and D. Laureola, something will have been gained.

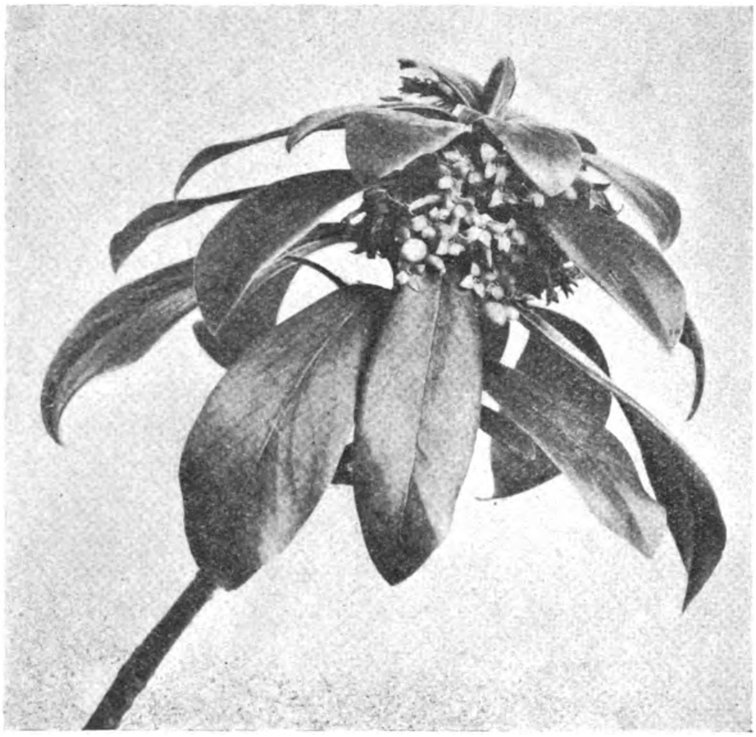

FIG. 88.—DAPHNE LAUREOLA.

One very interesting matter emerges from the notes and discussion on Daphne Laureola in regard to fragrance. It appears to be established that the flowers of Daphne Laureola are only intermittently fragrant; temperature and atmospheric moisture may determine the amount and periods of fragrance. We hope our readers will follow Miss Hinchliff's advice so that the periodicity of fragrance and its cause or causes may be determined. There is, however, another point which arises, and we trust our readers will endeavour to elucidate it next year. Mr. Bean believes that certain plants of D. Laureola produce scentless flowers, and there are others who incline to this belief. Mr. G. Harrow, formerly in charge of Messrs. J. Veitch and Son's Coombe Wood Nursery, informed us that some years before the war he obtained several hundreds of plants of the true Daphne Laureola from France. These were grown and flowered, but so far as he could discover not one plant produced fragrant flowers.

To sum up, more and definite information is needed on (1) whether certain plants of Daphne Laureola have fragrant flowers while others have odourless blooms; (2) at what period of their development the scented flowers yield their perfume, and (3) what are the atmospheric conditions and temperature under which fragrance is most pronounced.

We append several additional letters, and with their publication the discussion may very well cease for the present.

Mr. Bean sends us the following note from Mr. J. S. Gamble, Highfield, East Liss, Hants. dated March 1:—"A day or two ago my gardener and I tried the scent of various plants of Daphne Laureola in this garden (it is wild here and comes up self-sown in the borders). They were all scentless. I cut sprays of several and took them in and left them on a table for two or three hours. Then they became very sweet with the scent of Cowslips! Put in water, they scented the room, and my wife states they even killed the odour of Violets. Now, after two days, the scent is slight."

With reference to the attention which is being paid to Daphne Laureola the following note may be of interest. In a Beech wood in Hampshire where the Spurge Laurel is well established, and is probably indigenous, I found that the flowers were, without exception, sweetly scented, the odour being especially strong at dusk. The soil in this case is only a few inches deep and overlays chalk. Some years ago a few plants were lifted and transplanted to an ornamental wood in north Yorkshire. They are now healthy plants and bloom every year, but the flowers are quite without scent; the soil in this case is a deep, rather heavy loam. The conditions of light under which the plants are growing are the same both in Hampshire and Yorkshire, and it seems probable that the soil-quality is responsible for the presence or absence of scent.

I have often noticed that plants of Mignonette or Wallflower are invariably more sweetly scented if grown in the poor, dry soil of cottage gardens than if grown in heavily manured borders. In the latter case the size and colour of the flowers are more pronounced but the scent is often negligible. *N. Orde-Powlett, Bolton Hall, Leyburn, Yorks.*

I have been much interested in the correspondence in your pages re Daphne Laureola. It seems to me that we must have been growing several plants under that name, and my own experience may be of interest to others. While in Hertfordshire we had D. Laureola growing among rough shrubs; they were straggling plants, perhaps about a dozen in all, merely left because of the scent of their flowers, which was very noticeable by anyone walking in that part of the garden. The soil was good loam over chalk. At Marlow there was a large batch and the flowers wery sweetly scented; these grew on loam over gravel.

Before I came to Shalesbrook, D. Laureola (?) was planted somewhat extensively in a spinney, especially for the scent of its flowers. These plants are much more compact in their habit than the others quoted, and are forming nice bushes, but the flowers are absolutely devoid of fragrance. The leaves are exactly like those in what I have known hitherto as D. Laureola, but the inflorescence is terminal, with yellowish-green flowers that are only now opening (March 9). The soil is typical Heath land and all the Ericas do well here. *Evan G. Jones, The Gardens, Shalesbrook, Forest Row, Sussex.*

It is now too late in the season to further investigate the problem of when and why Daphne Laureola, normally sweetly scented, is sometimes not so. But if all readers of *The Gardeners' Chronicle* that have plants would next year begin to examine specimens early in January, write down the results, with date of examination, time of day, weather, scent (or not) out-of-doors, fragrance when gathered and brought indoors, and do this every week or ten days so long as the plant appears to be in bloom, finally sending the results of the examinations to the Editor of *The Gardeners' Chronicle* (who might get the evidence condensed and tabulated, if too bulky to print in extenso)—we might arrive at some certainty in these matters. *K. M. Hinchliff, Instow, N. Devon.*

BULB GARDEN.

NOMOCHARIS.

In the article on the above (p. 148), I wrote that, so far as I knew, Nomocharis could not be considered as perennial in any garden in Britain. This has brought me a note from Mr. Kenneth McDouall to the effect that N. pardanthina has been growing in the garden at Logan since 1921. The plants were raised from seed found by Reginald Farrer in Western China in 1919, and have flowered for the past three years. Mr. McDouall adds that during last summer thirty-seven plants were in bloom together, each plant carrying from one to three flowers while one had four.

Of more interest still is Mr. McDouall's statement that self-sown seedlings have made their appearance, for that is a good test of a plant's appreciation of its surroundings The Nomocharis at Logan grows in deep loam where "water hangs about the plants all the year round—they never get dry at any time." This implies marsh treatment, but the same treatment has not been successful in the south of England. On the other hand, bulbs cultivated in a cold house and kept short of water in the early autumn have prospered. *A. Grove.*

PUBLIC PARKS AND GARDENS.

THE Urban District Council of Leatherhead proposes to lay out a recreation ground on the Elm Bank estate at a cost of £1,200.

ABERDEEN TOWN COUNCIL is recommended to purchase the estate of Hilton for the city for the provision of open spaces and pleasure grounds, and as a housing site, at a cost of £22,000.

MR. H. BUTT, a magistrate of Weston super-Mare, has presented the Council with a cheque to provide a public park.

THE Town Council of Bexhill has agreed to purchase 22½ acres of land at Burnt House Farm, Sidley, for £3,500, for a recreation ground.

THE Preston Corporation Parks and Baths Committee proposes to purchase about six thousand square yards of land fronting Ribbleton Park at a cost of £1,050, for a children's recreation ground.

THE Middlesex County Council has received the sanction of the Ministry of Health to borrow £4,184, which is the Council's contribution towards the cost of the acquisition of land at Downhills by the Tottenham Urban District Council for a public open space.

THE Huddersfield Corporation having received a grant of £1,335 toward the carrying out of the scheme for laying out the Rashcliffe recreation ground, the borough architect has been instructed to proceed with the work.

THE Town Council of Morpeth has received the sanction of the Ministry of Health to borrow £1,150 for the construction of two hard tennis courts and a bowling green in Carlisle Park.

NOTICES OF BOOKS.

The Rose Annual, 1925.

THE nineteenth *Annual* issued by the National Rose Society is a publication worthy of this important floricultural society, which now has a membership of nearly 12,000. With such a large number of Rose enthusiasts from which to draw on for material for publication it is not surprising that the Editor, Mr. Courtney Page, has compiled one of the most interesting *Annuals* of the series, for the work contains articles from well-known rosarians on a variety of topics.

Several illustrations in colour and one or two in black and white serve to make the publication more interesting, and of the coloured plates one or two are of undoubted merit, such as those of the varieties Doris Dickson, Norman Lambert, Clovelly and John Russell, but it cannot be said that all the coloured plates of Roses are a success, nor does the bed of the hybrid Musk Nur Mahâl or the basket of Lady Inchiquin appeal to us. But if the illustrations are not all that could be desired the articles by the several authorities will be read with the greatest interest by all lovers of this beautiful flower.

It is interesting to notice in Mrs. Darlington's article on "Roses and Rain" that many of the newer varieties are splendid wet weather Roses and the writer had ample opportunity of comparing the merits of the several varieties cultivated in her beautiful garden at Potters Bar during the wet summer of last year. She truly remarks that sunshine is not essential to the well-being of Roses as the majority of growers generally believe. This we can confirm from experience, for the very finest Roses, so far as colour is concerned, are those we grow on a north border, and in this connection it may be observed that a little shade such as is provided by cordon fruit trees in the foreground of a Rose border serves to shade the blooms from the full glare of the sun and prevents the colours fading.

Those who desire to grow Roses under glass will find many useful hints in the articles by Mr. H. R. Darlington and Mr. Walter Easlea respectively, on "Roses under Glass," the one from an amateur's and the other from a nurseryman's point of view.

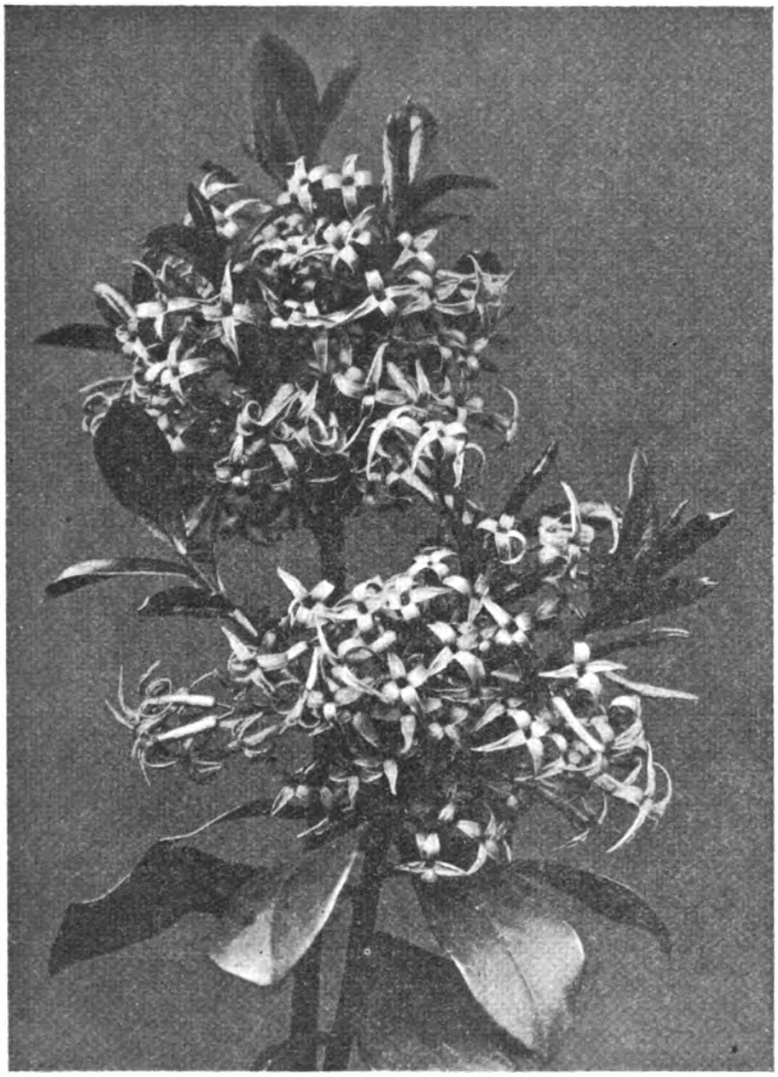

FIG. 89.—DAPHNE PONTICA.

The article on "The Romaunt of the Rose," by Mrs. May Byron, is a charming piece of writing in which a great deal of Rose history and Rose lore are included, but the statement that Rose gardening as a special culture is only just a hundred years old is incorrect, for this beautiful flower has occupied a prominent position in gardens in this country for a much longer period. She herself admits, further that the Rose has been the national emblem of England since 1641.

When the enthusiast has learned to grow and love Roses his or her next ambition is to become an exhibitor and those who are proposing to enter the list of exhibitors will find Mr. J. N. Hart's article on "Exhibiting Roses" and Mr. F. Slaughter's article on "Exhibiting Garden Roses" especially useful. Under the facetious title "Spotting the Winners," Mr. Lewis Levy deals with the novelties of the past few years, pointing out their good qualities and bad ones, and sums up his selection of the best in the past three years as follows: 1921: Ethel Somerset, Innocence, Rev. David R. Williamson, Souvenir de Georges Pernet, Venus and Mrs. Henry Bowles; 1922: Betty Uprichard, Mabel Morse, Mrs. Beckwith, Sovereign and Sunstar; 1923: Lady Dixon-Hartland.

The usual Rose Analysis is compiled by the Editor in which it is seen that the most popular exhibition varieties of nurserymen are George Dickson and Mrs. Charles Lamplough; and Frau Karl Druschki, George Dickson, Mrs. Charles Lamplough, Mrs. Foley Hobbs and Mrs. Henry Morse of amateurs. The nurserymen's selection of Roses for general garden cultivation are (for northern growers): Christine, Emma Wright, General McArthur, Golden Emblem, K. of K., Lady Pirrie, Los Angeles, Mme. Abel Chatenay, Mme. Butterfly, Mme. Edouard Herriot and Mrs. Henry Morse; the amateurs' selection for the north being Betty Uprichard, Col. Oswald Fitzgerald, General McArthur, K. of K., Isobel, Lady Pirrie, Los Angeles, Mme. Butterfly, Melanie Soupert, Mrs. Henry Morse, Mrs. Wemyss Quin and Ophelia; the nurserymen's selection of varieties for southern growers are: Betty Uprichard, Christine, General McArthur, Golden Emblem, K. of K. and Los Angeles; and the amateurs' selection: General McArthur, Isobel, K. of K., Lady Pirrie, Los Angeles, Ophelia, and Mrs. Henry Morse.

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Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to t. effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

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LILIUM LONGIFLORUM.

FEW Englishmen can have any idea of the extent to which the Easter Lily, as L. longiflorum is called in the United States, is cultivated in that country, principally for the Easter trade. There is nothing comparable to it in Britain, unless it is the early forcing of Hyacinths, which of late years has assumed huge proportions.

Originally, the bulbs of L. longiflorum were grown in Bermuda and shipped to the States, but towards the end of last century, disease caused such havoc in the Bermuda Lily fields that American florists were hard put to it for supplies of bulbs. The eventual failure of the Bermuda crops gave the Japanese their opportunity, shipments of bulbs from Yokohama to New York began, and before many years had reached a large total. It did not take our American cousins long, however, to discover that in the varied climate of the United States there are many districts where L. longiflorum could be cultivated to perfection. The subject has been investigated by the Bureau of Plant Industry attached to the Department of Agriculture, and from time to time the Department has issued reports on it. The last of these* contained an interesting account of the cultivation of the Easter Lily in northern climates.

As a result of a trial extending over six years, Mr. D. Griffiths, of the Office of Horticultural and Pomological Investigation, was able to report that with proper handling the Lily is sufficiently hardy to live through the winter with or without mulch, in the latitude of Washington, D.C., where the normal minimum winter temperature is 10° F., and the mercury commonly goes to zero at some time in winter. The view was expressed, too, that this Lily would be found to be hardy very much further north. There is nothing inherently unlikely in this, because, though no controlled experiments appear to have been carried out in this country or elsewhere with a view to the determination of the cold L. longiflorum will bear, we know that the bulbs may be frozen till they resemble balls of ice, without any detriment or subsequent loss of vigour. Moreover, although there has not been a sufficiently severe winter during the present century to ensure a rigorous test, bulbs of L. longiflorum planted in an exposed border in the writer's garden suffered no hurt in the first twenty years of the century.

The prime difficulty in the cultivation of L. longiflorum as a field crop in the States arises, as Mr. Griffiths has pointed out, from the fact that so long as the moisture and temperature conditions are favourable, the Lily does not stop growing. Mr. Griffiths reported that L. longiflorum "may be grown under wide extremes of conditions, but is difficult under conditions which might be termed intermediate. It seems to be a safe crop when properly handled in the climate of either Washington, D.C., or the frostless Bermudas, but in the Gulf States it succumbs to occasional low winter temperatures." The Concord Grape affords a parallel, for while it is hardy on the Great Lakes, it is frost tender in Florida. The explanation is found in that fact that in the north the plants are dormant during cold weather, while in the south they may be exposed to severe frost when in full vegetative vigour.

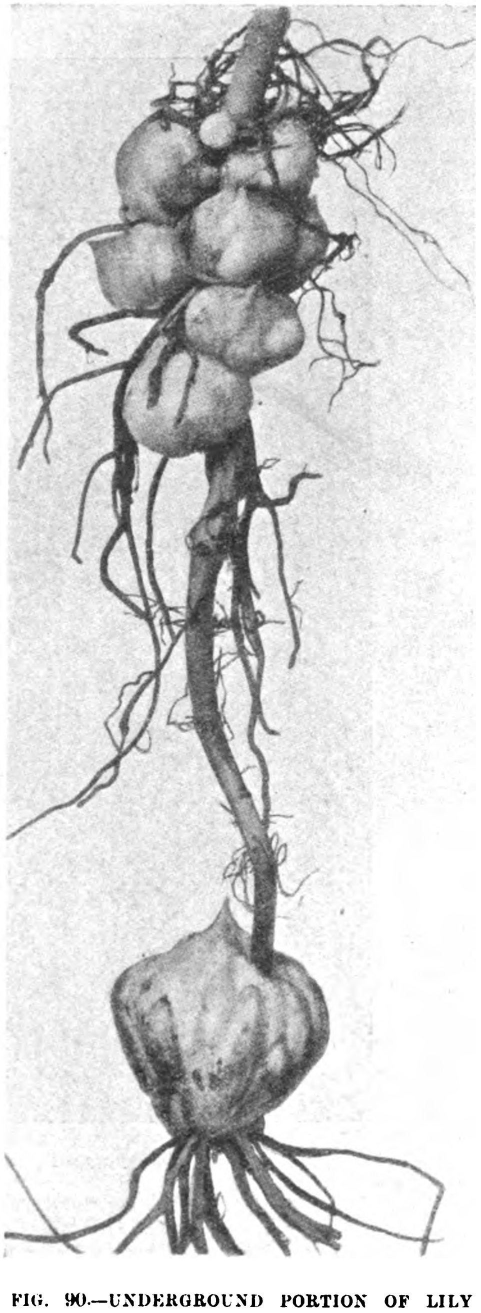

FIG. 90.—UNDERGROUND PORTION OF LILY PLANT AT DIGGING TIME.

Reproduced from *Bulletin*, No. 962, by permission of the U.S.A. Department of Agriculture.

Our American friends have found, as have the few individuals in this country who have seriously interested themselves in the cultivation of Lilies, that the most pracitcal method of raising L. longiflorum is by seminal propagation, and for the initial crop of seed, they, like others, have relied on bulbs imported from Japan. In America L. longiflorum is commonly forced and offered for sale at Easter, and such plants ripen their seeds early in June. Mr. Griffiths found that if sown when ripe, seeds germinated in six or seven weeks, but when held over until the following January, they germinated in about half the time.

The practice in the States is usually to sow the seeds about the beginning of the year, transfer the seedlings to two-inch pot, when the second leaf is fairly well developed which is usually early in March, and keep them under glass till early May, by which time they are generally safe from inclement weather. Then the little bulbs are transferred from the pots to the field, without disturbing the ball of soil about the roots. This presents little difficulty, for by the time indicated, the pots are usually so well filled with roots that the plants can be knocked out of them and carried in trays from the sheds to the field without material loss of soil. The small bulbs are set out five inches to eight inches apart, each way, in beds a yard wide, and after planting, the ground is suitably mulched to protect the soil about the bulbs from the sun. In July a few blooms appear—usually small and disappointing—and as the season advances, the stems grow taller and bear a large number of flowers. By the time frosts come "there will be plenty of plants showing from three to seven flowers or buds, and in rare instances, as many as a dozen. Possibly twenty-five per cent. will have flowered, and the earliest will be maturing their seed, but seventy-five per cent. of the plants will be in the form of large rosettes of basal leaves, and others will have started to form stems."

At the approach of the first autumn frost, the bulbs are forked out of the ground and placed in the smallest-sized pots into which they will go—usually about six inches in diameter. The potted bulbs are kept on the benches in unheated greenhouses until the night temperature falls to 40° F. Then the fires are lighted and a temperature of 45° F. to 50° F. is maintained until early in December, when it is increased to a maximum of 60° F.

When the bulbs are transferred from the beds to the pots it is possible to segregate them into five or more groups. One group will be in full bud and will bloom within a few days; another group can be handled to come into flower at Thanksgiving Day, another at Christmas, and a fourth at Easter. On the other hand, if it is so desired, all but the plants actually in bud can be held back till Easter. Treatment of the potted plants after flowering depends on circumstances. If they are sold, there is an end to the matter; but if retained for stock, water is generally withheld until, in about six weeks, the bulbs are dry. Re-planting in the open can be commenced about mid-April.

For all-the-year-round field cultivation, seedlings are planted out in late autumn, the points to be remembered being that the bulbs should be well rooted before the falling temperature of the ground stops growth, and no top growth should take place before winter, when it must inevitably be cut. To ensure a dormant condition during the winter is largely a matter of judgment and experience. In the propagation of L. longiflorum the Americans naturally make use of the bulblets which are found in such numbers in the leaf axils of the underground part of the stem (Fig. 90). The size of these depends on their number and the richness of the soil, but the best of them form flowering bulbs in one year. They are then from five inches to seven inches in circumference, and though not so large as the smallest of the imported Japanese bulbs, naturally give better results.

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* U.S.A. Dept. of Agriculture, Washington, D.C., *Bulletin* No 962, Aug. 12, 1921

The variety of L. longiflorum generally used in the States for forcing is eximium[*] (Baker), a form familiar enough in Europe. Von Siebold seems to have had it in the Botanic Garden at Ghent nearly a century ago, and it was imported into Belgium again in 1840. In the United States it is commonly but incorrectly known as Harrisii, the name having been derived from one Harris, a nurseryman of Philadelphia, to whom a lady gave some bulbs she had received from Bermuda, where the cultivation of this variety had been initiated some years before by an American, General Hastings. He, in turn, had brought the bulbs from Japan, but whether from the mainland or the southern islands is not clear. Harris, who attached his own name to the Lily, laid the foundation of the trade in the bulbs of this variety between Bermuda and the States. For a time the trade flourished, and then, as already stated, the ravages of disease due to unscientific methods of cultivation in Bermuda, compelled the American florists to look elsewhere for their supplies. They turned to Japan, whence for some years merchants had shipped small quantities of Lily bulbs to Europe and America, and after some trial consignments made with a view to the evolution of a satisfactory method of packing the bulbs, the Japanese commenced shipments to New York on a considerable scale. At that time (*circa* 1890) the bulbs were obtained from farmers in Roshu and Saitama, and no special distinctions were made between the varieties. Later on, the natural varieties of L. longiflorum were classified, and the black-stemmed, orange-yellow anthered variety, takesima[†] (syn. giganteum) made an appearance on the London market, having been imported by Dr. Wallace, of Colchester, through Mr. Runting, of Yokohama. The two main forms on which the Japanese then relied—L. longiflorum and the variety multiflorum—soon showed signs of deterioration, and the exporters had to seek fresh stock. By chance Messrs. Boehmer, nurserymen of Yokohama, happened to find a perfect type in the Romu islands, or Ogasawarajima, which was of excellent habit and constitution; but this source of supply did not last long, for the Japanese dealers sent four hundred or five hundred cases of diseased bulbs of the variety multiflorum to the Romu islands in the hope that in the virgin soil and fine climate the bulbs might develop the good qualities of the wild type found there. The inevitable happened and the majority of the Lilies on the island soon contracted the disease.

After this set-back the Japanese looked for bulbs among the Liukiu (Loochoo) group of islands, and found them on Okinawa to the south of Kagoshima in Kiushiu, as well as on Oshima. This is not to be confused with the island of the same name in the group of seven south of the province of Idju. It was known that L. longiflorum grew wild there among the Cycas revoluta, which had been collected and sent to Europe previously, but when harvested the wild bulbs were found to be weak and valueless for exportation. Before they could be turned into bulbs of marketable size it was necessary to cultivate them in gardens, and some years elapsed before this was undertaken on a systematic scale. The first serious shipments of this particular variety began in 1908, and though the bulbs had nothing to do with Formosa, the Japanese marketed them as L. longiflorum var. formosum—this has nothing to do with L. longiflorum formosanum, Baker[‡]. Initially there were the usual difficulties to contend against, because of marked variation in the plants. Tall forms and short forms, some with few and other with many flowers, were mixed; in some the flowers were pure white on green stems, in others the stems were purple, and the flowers of these usually had a distinct purple keel to the petals. By degrees, these forms were separated and marketed under distinct names, such as (1) longiflorum; (2) var. formosum (Fig. 91); (3) var. formosum with purple stem; (4) formosum multiflorum; (5) longiflorum multiflorum; (6) longiflorum giganteum; and (7) longiflorum var. foliis albo-marginatis. Later, Alexandrae was added, the variety coming from Uke-shima—the most northerly of the group of Loochoo islands—as well as from Amami Oshima. It is the Uke-yuri of the Japanese, and is a distinct variety, sometimes with upright flowers.

The fact that the Oshima-grown bulbs ripened about two months before those grown on the mainland was of importance to the Japanese in their American trade, because it enabled the American florists to force them into bloom at Easter with something approaching certainty. L. longiflorum giganteum has remained the variety most highly prized by exporters, because it suffers cold storage better than others and gives the quickest return to the grower; but the bulbs are late in coming on the market as they are cultivated in the north of the province of Saitama.

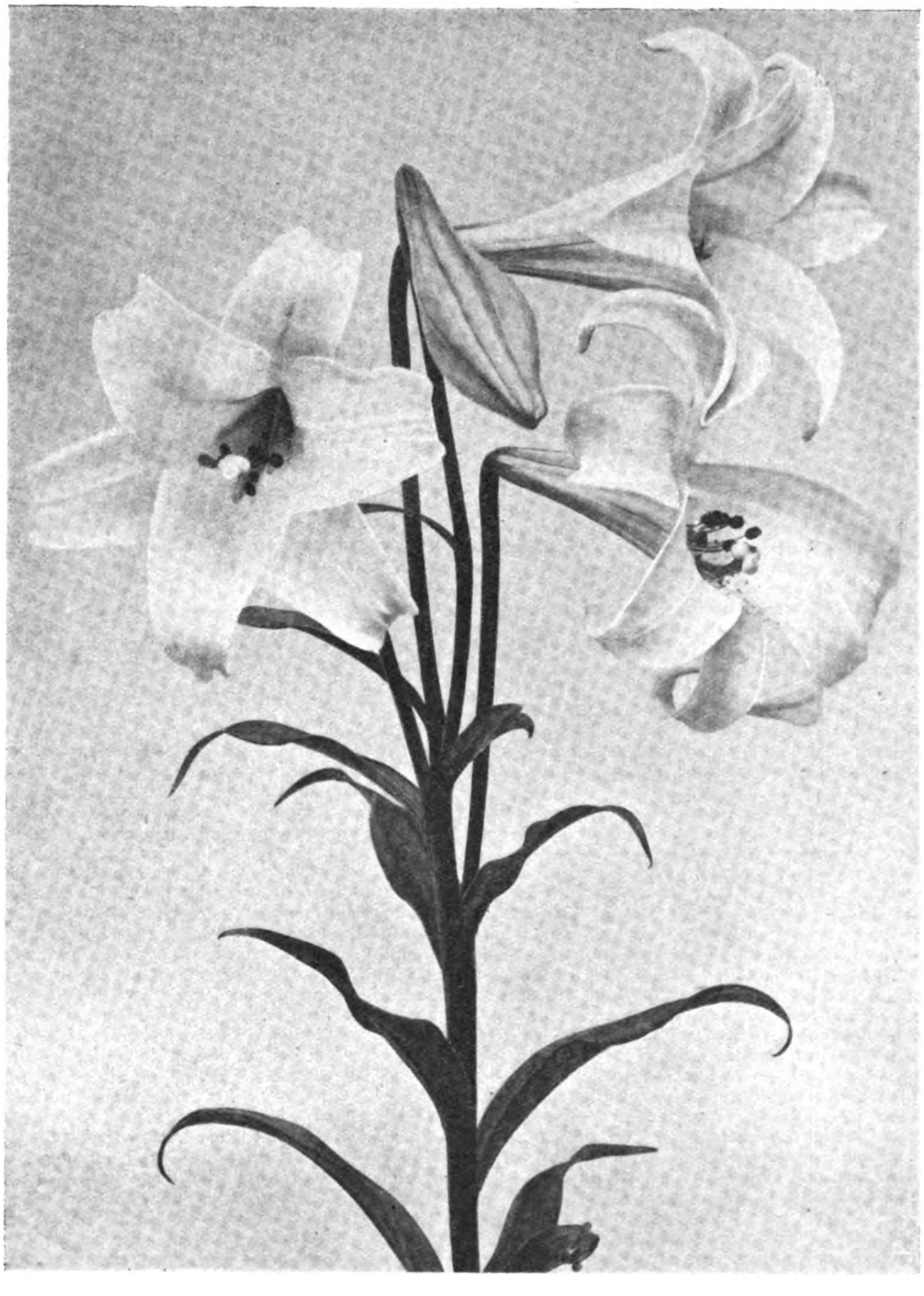

FIG. 91.—LILIUM LONGIFLORUM FORMOSUM IN MR. GROVE'S GARDEN, 1912.

The temptation to regard all the many forms of L. longiflorum as springing from the wild types of the Liukiu Islands is strong, but in that case the northern Saitama Lily must be regarded as a cultivated form. The point should not be difficult to determine. Hongkong, too, cannot yet be ruled out as a possible home of the species, for botanists of repute include it in the flora of that district. Bentham[*] gives the species a general locality, such as "On the sides of hills

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[*] *Gard. Chron.*, 1871, p. 479.

[†] Duchartre, *Obs. Gen. Lis.*, 1870, p. 38.

[‡] *Gard. Chron.* 1880, Vol. XIV p. 524.

[*] *Flora Honkongensis*, 1861, p. 374.

among grass (Champion, Hance), and on the Chinese continent," which is too vague for definite acceptance. Dunn and Tutcher* quote Bentham's reference (above) and add for locality Lofoushan. There may, however, be some confusion with L. Brownii, which is known to grow wild in Hong Kong. In the *Botanical Register*† there is a plate of the species, with a note to the effect that "L. longiflorum has been introduced from China by the Horticultural Society, in whose conservatory it flowered in May last (1821), when the present drawing was taken." At this date it does not seem possible to verify the country of origin of this particular plant, but the writer has recently received bulbs reputed to be those of L. longiflorum from Hongkong, and it should not be impossible to determine whether the species is wild there or not. The point will doubtless be elucidated in Mr. E. H. Wilson's forthcoming enumeration of Asiatic Lilies. *A. Grove.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

The usual form of Berberis buxifolia flowers in this latitude in April; but some years ago I noticed in Lady Alice Shaw Stewart's collection at Ardgowan, Renfrewshire, a bush of this species flowering a full month in advance of the type. I begged for a small offshoot from it, which is now eight feet high and was in full bloom on March 12, having opened its first flowers on February 15. I have not seen this variety noted in any treatise on shrubs; but it is a very desirable one, for it prolongs the flowering season of one of the best species of the genus. It is a pity that the rule of priority has caused Sweet's specific name "dulcis" to be superseded by Lamarck's "buxifolia"—Box-leaved—for the leaves of this Barberry, each armed with a needle-point, bear little resemblance to those of the Box, whereas it is the only one of the genus known to me that bears sweet, luscious fruit. The blackbirds, indeed, do not often give one a chance of sampling the ripe berries.

This Barberry, like so many other Chilian shrubs, revels in the moist atmosphere of our western sea-board; but it does not always get fair room for development, being too often crowded in a congested shrubbery. There is a specimen here which, planted on an open lawn in 1872, now measures one hundred and fourteen feet in circumference and fifteen feet in height.

One of the very best plants in the multitude recently introduced from the far East is Osmanthus Delavayi. The effect of the cheerless, wet summer of 1924 is manifest in the sparse blossom on many early-flowering shrubs; but no vagaries of weather seem to daunt this pretty evergreen, whereof the long, straight shoots are wreathed along their whole length with axillary flowers, white and fragrant. Not only has it proved quite hardy, but seven degrees of frost on March 12 have left no stain on the crowded blossoms.

Among vertebrate animals none has inflicted such injury upon the rural amenity of our country life as the pike and the rabbit. While the unpalatable, or at best insipid, pike has ruined an incalculable proportion of our inland waters by exterminating the succulent trout, every farmer, forester and gardener has suffered grievously from the introduction of that most undesirable alien the rabbit; which, be it noted, is not indigenous to Great Britain, but was brought hither in the middle ages from the Spanish Peninsula.

Both of these pests are prodigiously prolific. While the monks of old have been held responsible for the wide distribution of pike in our waters, I have it on my father's authority that in his father's day—early in the nineteenth century, rabbits were deliberately turned loose in this part of Scotland, whither they had not previously penetrated. Bitterly did I reflect on this irretrievable act as I gazed upon a soft, purple carpet of Crocus vernus, far-flung over the sward round our parish manse. There is no wood near at hand, wherefore no rabbits invade these precincts. Were it not for these rapacious rodents what charming effect might be had from drifts of this and other species of Crocus in many a demesne now infested by them. Luckily, they cannot assimilate Snowdrops, Daffodils or Bluebells.

The Crocus in question is not one of what my good friend Mr. E. A. Bowles has aptly described as "the fat, prosperous, gone-into-trade-and-done-well-with-it garden forms of C. vernus"; but the simple, perhaps type, variety popularly termed the Scotch Crocus; I know not why, seeing that it is assuredly not a native. It seems to have been discarded by the trade, for I have sought in vain for it, being invariably supplied with a Dutch substitute. These Dutchmen are undoubtedly fine flowers, but they do not spread through grass so rapidly as the kind I have in view, nor do they flower so early. In his recent admirable *Handbook of Crocus and Colchicum* Mr. Bowles assigns March to April as the flowering time of C. vernus (p. 72). That applies accurately to the garden forms; but the so-called Scotch Crocus comes a full month earlier. This winter it was unusually precocious; I noted the first blooms in the manse grounds aforesaid on December 20 last, and throughout January and February the display continued at its best. Probably our moist, mild winter climate may account for the discrepancy. *Herbert Maxwell, Monreith.*

KEW NOTES.

No. 1 HOUSE.

The Aroid House at Kew—officially known as No. 1 House—has an interesting history, for it was formerly in the Royal Gardens at Buckingham Palace and is, I believe, the oldest glass structure in the Botanic Gardens, for it was re-erected at Kew in 1836. On the style of the old Orangeries of the Georgian period it is a massive, stone-built structure and of very imposing appearance, although, of course, not nearly so large as the Palm House or Temperate House, but it probably ranks third in size. For some reason or other, most probably because the plants it contains are not so strikingly ornamental as in some of the other houses, it is frequented by very few visitors, indeed it may be regarded as the "cinderella" of all the glasshouses at Kew. True, it is a little out of the way, for the main pathways seem to lead right away from it and the environment is not the most attractive part of Kew, for the little pathway leading to it is guarded on either side by sombre beds of Yuccas while two very unattractive looking Palms, Trachycarpus excelsa, stand like guarding sentinels before it, and with another uninviting bed of Yuccas behind them. Yet the house itself is a most interesting one and is intended to represent the vegetation of a tropical forest. The temperature is, in consequence, very warm, and never allowed to fall below 60°. On the day of my visit, which was almost sunless, the thermometer registered 66°, but on a clear, bright day, the sun will cause the temperature to rise to 90°.

The atmosphere is kept charged with moisture; the house is damped down the first thing in the morning, the floors and staging being soaked with water and this is done again at mid-day and the last thing before closing time. Yet with all this watering when the house is entered in the morning everything seems to be dry and the pebbles on the plant stages appear quite white as though they had not been moistened for a very long time. But after the first damping in the morning drip from the condensed moisture on the roof commences to fall almost like rain, especially on the north side, and because of this continual dripping of moisture the pot plants suffer through the soil becoming stagnant.

Most of the pot plants on the stages are grown in a mixture of peat, charcoal and sand with pieces of Fern rhizomes from the peat and a few leaves placed over the drainage. Of course the greater number of the plants consist of Aroids, but there are also tropical Palms, tropical climbers, such interesting subjects as the Traveller's Tree, Musas, Monstera deliciosa, Pothos in variety, Alpinias and other handsome-leaved exotics. In former years this house contained some of the largest Ferns, other than tree Ferns, to be seen in cultivation in this country, —four magnificent specimens of Angiopteris evecta. These, however, have completely disappeared, taken, presumably, to some other glasshouse. I missed also the Hoyas which at the time when I knew this house very intimately formed a conspicuous feature, especially when in bloom.

The Anthuriums, of which the house contains a very extensive collection, did not appear to be so finely in health as I have known them, but probably the reason is because the choicest specimens of these and some of the other tropical Aroids are to be found in the Nepenthe House, where they succeed in the highest perfection, and such plants as Alocasias develop their handsomely tinted and beautiful formed leaves in perfection. The roof is partly supported by a number of iron pillars, and tropical climbers are trained up these so that the house appears to be filled with vegetation almost to the roof.

One of the most remarkable plants is the tree of Amherstia nobilis, which has been described as the most glorious flowering tree in existence. Since I first knew this tree it has grown extensively and has reached practically to the top of the house and spread over to the opposite bed, so that the branches extend almost across the house. This tree usually flowers each season and did so last year, although I was informed that the display was not so good as usual, as "the painters were in" some few months previously.

The main floor of the house is occupied by four beds with a broad path and a central circular bed which has been planted with a variety of subjects at times, including Dracaena Godseffiana, but nothing has been found to succeed so well as Alpinia nutans, a foliage plant like a glorified Canna, which makes fine growth and apparently does not mind "drip" in the least.

I think the most interesting view is to be seen at the north-west end where, on the one side, is a big plant of Ravenala madagascariensis, the Traveller's Tree, and on the other side a tall Musa, M. malaccensis, some thirty feet tall. The leaves of the Ravenala are very like those of the Musa, but they have long petioles which arise from the base of the plant, whereas the leaves of the Banana clasp and make a false stem. At this end of the house is a most interesting leguminous plant, Bakiaea insignis, which has the largest flowers of all the Leguminosae. They are white and produced in June. Bakiaea insignis is a native of tropical Africa, and has shining, dark green, ovate-lanceolate leaves, with a curious swelling or pulvina at the junction of foliage with the stem. It is not easy to determine whether the foliage is simple or compound, but, as the ends of the growths terminate in a pair of leaflets, the suggestion is that they are compound.

The tall, iron columns, furnished with tropical climbers, are a very distinct feature of No. 1 House. Those gardeners who have specimens of Monstera deliciosa would be surprised to see the size of the one in this house. It has grown to the top of the building and produces inflorescences which later give ripe fruits of a flavour somewhat like Pineapple. The plant has sent down aërial roots from above as pliable and as thick as sash cord, many of them being twenty feet to thirty feet long; on reaching the ground they enter the soil and serve to contribute nourishment to the plant.

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* "Flora of Kwan-Tung and Hongkong," in Kew *Bull. Misc. Inf.*, addn. Ser. X., 1912.

† *Bot. Reg.*, 1821, vol. 7 t. 560.

On a neighbouring pillar is a specimen of the West Indian Philodendron lacerum, a plant with somewhat similar foliage to that of the Monstera, but not so deeply cut and of a lighter green shade, nor is the blade punctured. P. scandens is one of the strongest growing of all these climbers, and at one time it formed festoons across the roof, making a screen over the pathway, but the plant is now restricted to its iron column. It grows very rapidly, and whenever any of the branches or roots are cut back they exude a black sap that stains the stone of the pathway. Scindapsus is another rank-growing climber of this type, and the large, ovate foliage has a little variegation or mottling of yellow like that found in some Dieffenbachias. In a corner of the house, growing up the wall, is another stove climber, namely, Pothos Loureiri. Each shoot of this plant looks as if it consists of a compound leaf with the leaflets arising alternately in the same plane and each has a constriction about halfway up the blade, the lower part probably representing a leaf-like petiole.

Palms are represented by several species of several genera. The tall-growing Calamus or Cane Palm, is represented by C. viminalis from India and Malaya, and C. leptospadix with long, upright-growing stems furnished with numerous spines, by which the plant apparently climbs, and graceful, Kentia-like foliage. Daemonorops Lewisianus is also a tall-growing Palm and has very spiny petioles to the graceful, arching, pinnate leaves.

Carludovica palmata, the plant from which Panama hats are made, has most glorious leaves of pale green, incised at the edges to make a beautiful fringe. It has a big, fan-like leaf and is quite different to its congener, C. plicata, in which the leaves are very dark green on both sides and split halfway in the centre of the blade, the rest of the blade being puckered before the leaf pinnae separate. Pleomele (Dracaena) thalioides deserves mention for the arrangement and form of its leaves. The foliage bases are light grey and crowded together as in Pandanus; the leaf has a long, grooved petiole and corrugated blade, the whole looking like an Egyptian boat paddle. One of the plants is in flower, but the inflorescence is not striking, being merely a long spike bearing a cottony mass of stamens and a pinky pistil.

Melocanna bambusoides might not be taken on first sight for a Bamboo, but on close inspection and especially when the foliage is drooping and fading the affinity is apparent, and the culms, too, are very like those of Bamboo stems.

Another plant that deserves mention is Xanthosoma violaceum, for it has violet-coloured petioles and violet-coloured leaf ribs. The blade itself is metallic-green, and hastate in shape, being altogether of a very grand appearance. The Screw Pines are represented by a remarkably healthy specimen of Pandanus utilus growing in a big pot stood on one of the beds. The serrated edge, when the leaf is held up to the sun, is extremely handsome, the whole of the spines and narrow margin being ruby coloured. Clinogyne leucantha claims notice for its beautiful, bronzy under-surface to the foliage, the blade of the leaf being at a right angle to the petiole.

Amongst the more interesting plants on the stages, beside the collection of Anthuriums on the south side, are Pitcairnia corallina that sends up greyish-green foliage some three feet or four feet long, with little prickles at the base, from which it also sends out its imposing inflorescences of scarlet flowers now in their full beauty.

The introduction of brackets of virgin cork after the fashion of big tree stumps, on the plant stage on the north side, is a recent innovation. One of these tree stumps is planted with a variety of Orchids—Laelias, Cattleyas, Coelogynes, Sarcanthus, Dendrobiums, etc., whilst the other has the numerous pockets filled with Bromeliads, such as Æchmea fulgens, Æ. miniata, Billbergia porteana, Tillandsia tricolor, Nidularium Meyendorffii, and Vriesia splendens var. Brongii.

It is too early yet to see the Dieffenbachias at their best, and a little later the Anthuriums, Alocasias, Calatheas, and such-like plants will be in better form, for it is when they have made their fresh leaves and the sun has enough power to develop their rich shades that they show to fullest advantage. *G. F. T.*

FRUIT REGISTER.

APPLE BETTY GEESON.

THERE are various accounts of the origin of this Apple. Dr. Hogg. in the fifth edition fo *The Fruit Manual*, writes: "In the last edition I described Betty Geeson as a Yorkshire Apple. It is really a Worcestershire variety, and was sent to a meeting of the British Pomological Society in 1854 by Dr. Davies of Pershore, by whom grafts were distributed among members of the Society." It is not mentioned in the *Catalogue of Fruits*, published by the Horticultural Society in 1842, and was probably unknown at that time, as over one thousand varieties were mentioned. Scott's *Orchardist*, published in 1874, dismisses it in a very few words without any note as to its origin. Ronalds' *Pyrus Malus brentfordiensis* does not include it, while Bunyard's *Handbook* repeats Dr. Hogg as to its Worcestershire origin. The *Herefordshire Pomona* states: "raised from a pip by Betty Geeson, an old woman who lived in a village near Belvoir." As the surname "Geeson" is still to be found in some of the villages near Belvoir, I consider the *Herefordshire Pomona* gives the correct account, and this is corroborated by Mr. Glenn, of Harston, to whom I lately addressed some questions on the subject. He replies: "I asked Miss Hedworth, who was born here, and her people before her, and she told me she could tell me about the Apple as she heard it from her grandfather and grandmother; the Apple was raised by a Geeson who lived in an old thatched cottage at Knipton—the site is now occupied by the Peacock Cottages—she has a Betty Geeson Apple tree in her garden planted by her father when she was ten years old, or 56 years ago. I have measured it and it is about thirty-eight inches in circumference. In the parish registers of burials I find six Geesons between 1817 and 1840, ranging from seventy-two to eighty-seven years of age; one entry, February 3, 1823, is of Elizabeth Geeson, aged seventy-seven years. These may have been relatives of Betty, but it seems fairly clear that either Harston or Knipton has the honour of being the place of origin of the Apple."

A few years ago I knew of several trees in the district, some of which have since been cut down. Betty Geeson is a very useful cooking Apple that will keep well into March and generally bears good crops. In many respects it bears a strong resemblance to Bramley's Seedling, of which it was probably one of the parents, although it is more compact in growth than that variety; in the *Report of the Apple Conference* of 1883 it is No. 27 in the selection of sixty culinary varieties for the whole of Great Britain, and also appears in several of the district selections for Scotland and England. *W. H. Divers.*

APPLE GRAVENSTEIN.

As a second-early Apple of first-rate quality, this variety is often overlooked; it has one failing, its cropping qualities not being very great, and this militates against extensive planting of the variety.

The flesh is crisp, but devoid of toughness, very juicy, with an exquisite flavour; the fruits are of moderate to rather large size.

The tree does splendidly in espalier form on the Paradise stock, and should be much more extensively planted. *Ralph E. Arnold.*

HARDY FRUIT GARDEN.

APPLE LEAF SCORCH.

ON page 188, *Gard. Chron.*, March 14, 1925, *Market Grower* states that at Long Ashton, deprivation from potash has been shown to be a cause of or associated with leaf scorch. Reference, however, to the records published (*Annual Report*, Long Ashton Station, 1921 and 1922) shows that this is by no means the case. It appears that trees *from which potash was withheld were most immune to leaf scorch*, in fact apparently less attacked than any or almost any of the batches; these are the trees to which only rain water was given (Series H)—observation July 6 (*Rep.* 1921, pp. 46–47) "no leaf scorch"—Sept. 24 (pp. 48–50) "no leaf scorch"; also summary (*Rep.* 1922, p. 15), "There was no leaf scorch present during the season"; whilst individuals in the other categories showed affection to a greater or less extent.

It seems that of the trees which received the saline solutions, those treated with an absence of potash salts are said to be the most severely affected, but that only points to some sheltering effect against the untoward action of the other, or some of the other, salts in the solution; and other constituents might be held to exert a similar sheltering action, for instance (*Rep.* 1921, p. 49) severe leaf scorch with magnesium withheld. Unfortunately there are no controls recorded in this series of pot experiments, and we look in vain for the presence of carbonates or humic matters, not to say one or more complete or ordinary soils.

But the possible *role* of potash is still further ousted by the observations on soils in "scorch" and "non-scorch" areas; a solitary example is given (*Rep.* 1921, p. 92) in which the available potash in the surface soil of a scorch area is given as 0·0109, on the "non-scorch" as 0·0129, whilst in the subsoil the data may be assumed to be identical within the limits of experimental error, viz.:—0·0058 and 0·0060. In passing, it may be noticed that we do not know what may be the requisite available potash for healthy Apple growth, but Dr. Bernard Dyer (*Journ. Chem. Soc.*, LXV., 1894, p. 162) considered that the "limit for the non-necessity of special potash applications . . . lies below 0·005 per cent." It will be observed that this limit is well exceeded in the subsoil, not to mention the surface soil.

One large grower, I know, avers that wherever he gets any leaf scorch there the field vole has been burrowing around the trees; this, of course, can hardly be the universal cause, but it points to the factor of soil disturbance. Judging by what is seen in large plantations, one carries the impression that the cultivation is done far too deeply and that the merest surface skimming would be preferable; the objects being to clear weeds and engender a more or less impalpable surface which would serve as an insulating layer to protect firm underlying soil from the heat and evaporation caused by the sun. But that is only considering the effect of one factor. *H. E. Durham.*

VEGETABLE GARDEN.

VEGETABLE MARROW.

[CUCURBITA PEPO, LINN.].

THIS vegetable is a somewhat humble member of a very numerous family of tender annuals of which the various units appear to be slightly mixed, and the relationships not clearly understood.

The culture of the plant in our country is not of very ancient date, but its extent at the present time is quite considerable.

The amount of solid nutriment Vegetable Marrows provide is relatively very small, and to the ordinary observer. the fully matured seeds appears to be the most nutritious part of the entire plant! It hardly seems likely that the production of the seeds for human food was the first cause of its cultivation in Britain, although in the writer's earlier years this was declared to be the fact; but a careful study of several authorities fails to find any confirmation of the assertion.

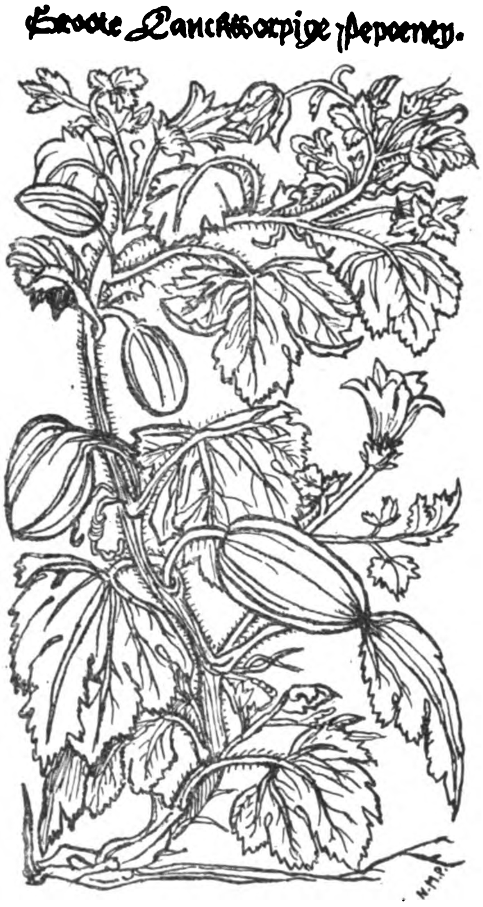
Groote Lanckachtighe Pepoenen.

FIG. 92.—PEPO MAJOR OBLONGUS.

The Long-ribbed Vegetable Marrow: from the Herbal of Dodonaeus, *circa* 1554.

In Italy, however, the seeds of the Cocozelle are an article of every-day consumption. Visitors to Naples and other southern cities may see on the barrows of the costermongers on the Via Santa Lucia a pile of clean, ripe, plump, Marrow seeds lying alongside the nuts and other comestibles for which the passers-by gladly pay their soldi, and which they eat with evident relish. The fact that the seeds contain a fair proportion of fatty matter appears to be their chief recommendation. One other use for the seeds, which may be of interest to lady readers, is set out in Lyte's translation of Dodoen's *Herbal* thus:—"The seeds of Pepons powned with meale and their own juyce doth beautifie the face, for it taketh away freckles and all spots of the face if the place be well rubbed with it in the sunne." If the fruit be taken when partly developed and be cooked whole, while the seeds are soft and tender, some folks esteem the seeds and their "cushion" the best part of the fruit. It is stated that the flesh is sometimes boiled down with other fruit and converted into jam.

The preparation of the Vegetable Marrow in the average London restaurant leaves much to be desired. Too often it is a sodden mess drowned in its own juice and only fit for the pig-stye; but if it is served up properly cooked, and drained, accompanied by small silver-white Onions boiled in milk, with just a finishing touch of melted butter, it forms a light and healthful dish. The Italians excel in the art of cooking Marrows and one favourite method is somewhat as follows:—The Cocozelle (Green Bush) is the best variety. Take the young fruits when about four inches long and less than one inch in thickness, cut them into chips about the size of a Windsor Bean, fry in butter or olive oil if preferred, and serve quite hot, and they will be found a rare delicacy. If this method is adopted early in the season, the plants will continue to develop fruits until the cold weather sets in; more than one hundred have been produced on one plant.

The origin of the Vegetable Marrow appears to be obscure; the following extract from an article on Gourds which appears in *The Vegetable Garden* (Vilmorin) is a fairly satisfactory settlement of the difficulties involved in this intricate case: "To M. Charles Naudin belongs the credit of having first thrown light upon the chaos of species and varieties, and of having ascertained the origin and parentage of the different forms, all of which he refers to three very different species, viz., Cucurbita maxima, Duch.; C. moschata, Duch.; and C. Pepo, Linn." The Vegetable Marrow is placed under C. Pepo with some varieties of Pumpkin, and Squash, with which I am not at present concerned. Like all the members of the Gourd family, Cucurbita Pepo is subject to great variations, which accounts for the considerable differences that exist in the ever-increasing list of varieties offered at the present day.

On the subject of origin the *Herbal* of Dodonaeus is helpful. In Book XXII, Cap. 4, he illustrates and describes four different varieties, viz.:—1. Pepo major oblongus, a trailing plant with oblong fruits resembling the long-ribbed, trailing Marrow (see Fig. 92) of which it may possibly be the parent; 2, Pepo rotundis major, with fruits like a large, round Pumpkin; 3, Pepo rotundis minor, a slender plant, with small, round, ribbed fruits; and 4, Pepo latus, that is Broad or Flat Pepo, a slender trailing plant with fruits like the flattish form of Custard Marrow, of which more later on.

The suggestion that the first-named may be the parent variety is offered with all diffidence, but it appears to the writer to be a quite reasonable proposition. If it be correct the Vegetable Marrow has been in cultivation for nearly four hundred years. It does not necessarily follow that it has been known and grown in Britain for that time.

Turning now to a few of the more recent authorities, Wm. Drummond's Catalogue for 1754 offers Pompions and Gourds, but his friend Justice ignores them in his cultural directions; and Miller in his *Dictionary*, 7th edition, 1759, who appears to have judged every plant from the standpoint of the Apothecary or the cook, treats the Pumpkin thus:—"The sort which is known by the title of Pumpkin, is frequently cultivated by the country people in *England*, who plant them on their dunghills, ... they will produce large fruit: these they suffer to grow to maturity, then they cut open a hole on one side, and take the seeds out of the pulp, after which they fill the shell with Apples sliced, which they mix with the pulp of the fruit, and some add a little sugar and spice to it; then bake it in an oven and eat it in the same manner as Baked Apples; but this is strong food, and only fit for those who labour hard and can easily digest it."

Donns' *Hortus cantabrigensis*, revised by "J. L." inserts "Cucurbita pepo,—pumpkin.—East Indies—1750," but a reference to Dodoens would have shown the reviser that the date of introduction is erroneous. John Mason in his catalogues for 1793 and 1800 offers Pumpkin and the following fancy Gourds:—Orange, Rock, Striped Pear, and Trumpet. Marrows are not mentioned, neither do they appear in any later catalogue of his or his successors until 1851-52, when in the Wholesale Catalogue of Noble, Cooper and Bolton appears just the one line, "Vegetable Marrow 8/- per pound;" and one line it remained until 1873 when Robert Cooper, the surviving partner, added Custard Marrow and Moore's Cream to the list. Five years later (1878) Chusan Green Striped and Green Bush brought the list up to five distinct varieties, and in 1884 Hibberd's Prolific, Muir's Prolific, and King's Acre Cream increased it still further.

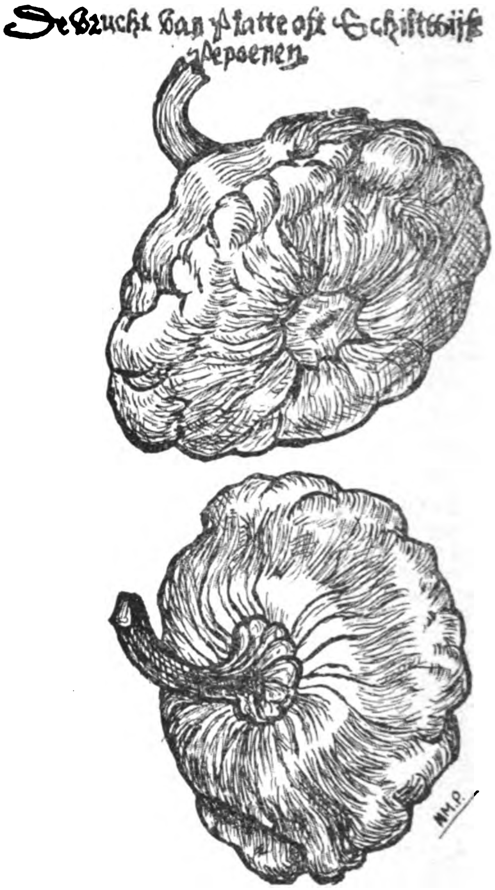
De vrucht van platte oft Schiltwijse Pepoenen

FIG. 93—FRUITS OF THE FLAT OR SHIELD-SHAPED PEPO.

The Custard Marrow, from the Herbal of Dodonaeus, *circa*, 1554.

What has happened since then is common knowledge and does not need to be detailed here. There is no lack of varieties to choose from, and, happily, they are sufficiently varied to suit the tastes and requirements of every grower. They are divided naturally into three classes, the Trailing, which as a rule produce the largest and longest-keeping fruits; the Semi-trailing, which produce fruits sof medium size which are often earlier to mature, and the Bush varieties, which are a very distinct class and the best for small gardens or for those who prefer the fruit in a very young state.

The varieties to which awards were made at the Wisley trials were: Long—Smooth White, Green Striped, and Ribbed; Half Long—King's Acre, Cream, First of All, and Moore's Cream Striped (similar to Table Dainty); Bush—Green; Custard—Long Island Bush, and Cream. Other varieties include Tender and True, a round, Green Bush variety; Pen-y-byd, a cream-coloured round Marrow, rather variable in character, and Perfection, a green, striped form of Pen-y-byd, which is superior in every respect. Rotherside Orange, a modern introduction, with small, flattish-round fruits of a creamy-orange colour, was also highly commended at Wisley.

The last section is the Custard Marrow, which differs from the foregoing in many respects. It is claimed by some modern botanists that this singular plant does not belong to the Fancy Gourds, as the form of the fruit would lead one to suppose, but is an offspring of Cucurbita Pepo, and some comfirmation of the justice of the claim is furnished by the fact that it was so classed in the *Herbal* of Dodonaeus nearly four hundred years ago. It is a fair inference that at the date when the *Herbal* was published the Custard Marrow was a novelty, and that it was considered a valuable find, for in addition to an illustration of a fruiting plant—such as is given of other varieties considered worthy of being illustrated—a picture is given of the front and back view of a fully developed fruit (Fig. 93) which are identical with those of what is believed to be the parent variety, viz., a yellow-skinned, flattish-round or shield-shaped fruit, the produce of a semi-trailing plant, which is the most popular form grown in Britain to-day. The Flemish name given by Dodoens, Brede oft Platte Pepoenen, is in plain English Broad or Flat Pepo; the Latin name is Pepo latus. In France it is known as Patisson and in America as Patty-pan or Cymling

There are now several other varieties, notably the Silver Bush Custard, which has rather larger, milk-white, flat, star-shaped fruits, and is the most popular variety in America and other warm countries. A sample of it in the recent trials at Wisley was Highly Commended, Other varieties are the Green, the Striped, and the Orange, but these only differ in the colour of the skin.

The foregoing are mainly bush varieties, but there is a variety known in America as Congo and under several other names, which is a trailing plant and produces conical fruits. This is not often seen in Britain. The old Thorburn firm possessed a very good strain of it, but of its early history very little is known.

Although, as shown above, the Vegetable Marrow had become an article of commerce in England in 1851, its merits do not appear to have been fully appreciated at that time, but the foregoing lists will show that since that date it has shared in the progress which has affected all branches of horticulture. *S. B. Dicks.*

RED CHICORY.

Red or Venetian Chicory is, I understand, known as Gorizia (a place which showed other redness during the war) along the Adriatic, and this is the name we generally use. Vilmorin gives the synonym "Rouge de Lombardie" and "Buntblättrige Forellen-Chicorie." It is a useful addition to the winter or early spring salad, together with its larger brother the Witloef; it also gives an inviting bit of colour, intense as the Beetroot.

As obtained in the market a more or less considerable proportion of leaves are variegated in the plants raised; however, by continued selection one can very nearly eliminate these and get full, deep, self-coloured leaves. My strain was obtained in Trieste about 1912 and we eliminate all variegated specimens for seeding. For the past few years we have had very few variegated plants.

When blossoming the plant is strikingly ornamental with its coppery leaves and delicate blue flowers, forming a "bush" about four or five feet high; so much so that one friend begged seeds for raising plants for ornamental purposes.

It has a disadvantage against Witloef, in that it does not make such fine roots; they tend to fork and do not yield the compact heads that are given by the "King of winter salads"—a necessity for the early salmon! *H. E. D.*

HOME CORRESPONDENCE.

Strawberry Plants and the Wet Winter.—(See p. 154) I fear that many Strawberry plants will come to grief this season in many other parts of the country besides Bangor. In North Devon our plants have almost vanished, owing to storms and torrents of rain. During the past three months we have registered a total of 14.44 inches of rain. *North Devon.*

Bees and Apple Fertilisation.—I am interested in this subject and have made trials for ten years for the purpose of discovering whether varieties of Apple are, year by year, self-sterile or self-fertile. I believe the experience of all those who have made experiments on the fertilisation of our hardy fruits is that the same results generally are obtained year by year. In Apples I think one might say two-thirds of the varieties are absolutely self-sterile, and only one-third are in different degrees self-fruitful. Among the most self-fertile Apples may be mentioned: Stirling Castle, Rev. W. Wilks, Lord Derby, Golden Spire, Irish Peach, and Christmas Peach; but each of these varieties will mature, say, five or more times as much fruit with pollen of another variety. Cox's Orange Pippin and Lane's Prince Albert each showed themselves self-sterile, but after one hundred to one thousand trials each has matured one or more fruits; personally I have made many self-pollination trials without getting fruit to mature from either of these varieties, whereas with pollen of another variety some fifty per cent. of the trials mature fruit. The conclusion of all experimenters is that no variety of Apple grown in England (or elsewhere) is sufficiently self-fertile to plant alone for profit. The chief experiments on the subject have been made at the Royal Horticultural gardens on Apples, Pears, and Plums, and at the John Innes Horticultural Institution on Apples, Plums, and Cherries, and from either of these information can be obtained. My own experiments on a smaller scale at Wye correspond very closely with their results. There is naturally some prejudice against bees among fruit growers because they do possess stings and because bee-keeping necessitates some trouble and knowledge of doing things at the right time. But I believe any one who studies the subject without prejudice, knows that bees increase fruitfulness. I have noticed that the most progressive and successful fruit farmers in Kent keep bees and believe in them. Locality will influence the advisability as to whether or not to keep bees; where there are plenty of bumble bees and small wild bees and the area under fruit is not great, perhaps hive bees would make little difference; but where there are extensive plantations say of Black Currant, Gooseberry, Plum, Apple and more particularly Cherry, provided there are different varieties of the tree fruits, I am sure bees will increase the yield. *Cecil H. Hooper, Wye, Kent.*

Masdevallia tovarensis.—In his notes on Masdevallias (*Gardeners' Chronicle*, page 178), Mr. Collier's advice concerning Masdevallia tovarensis reads: "When re-potting this species cut away the flower spikes close to their base." I wonder if this is a slip of the pen, for if the withered flowers only are removed leaving the flower stems intact, flowers are produced the following year on the old flower stems. *Masdavellia.*

Carnation Competition.—In reply to Mr. C. Engelmann's letter regarding our recent Carnation competition, the necessary voting cards were sent out to all our clients in the autumn, and also with all catalogues. We did not stipulate that a voter had to be an actual grower of a variety before he or she could vote upon it, and we imagine that some voters were influenced by our family name and by catalogue descriptions. *Allwood Bros.*

SOCIETIES.

ORCHID CLUB.

The meeting of the Orchid Club on March 13 was noteworthy for a remarkably fine display of Cymbidiums and Dendrobiums.

The President, Sir George Holford, K.C.V.O., was present to meet the members of the Club.

PREMIER DIPLOMAS.

Cymbidium Alexanderi Westonbirt var.—An upright spike of six large, well formed flowers of great substance. The sepals and petals are white, the lip also is white with a zone of crimson blotches.

C. Miranda Westonbirt var.—A magnificent arching spike of twenty-two large, well formed and elegantly displayed flowers. The sepals and petals of a greenish golden hue; the lip is white with a marginal crimson band.

C. Flamingo var. roseum—A seedling plant flowering for the first time; it carried a spike of five flowers having the rounded form of the Merlin parent. The sepals and petals are white flushed with rose, suggestive of Apple blossom tints; the large lip is white, flushed with a zone of dark rose colour.

C. Redshank.—The plant carried a spike of eight, large, well-formed flowers. The sepals and petals are white, the very large lip white with large dark crimson blotches and lines.

DIPLOMAS OF MERIT.

Cymbidium Landrail.—A very fine form of this hybrid.

C. Bullfinch var. Brilliant.—A well-formed flower with sepals and petals yellow lined with crimson; the lip is white with a crimson band.

C. Goosander var. exquisitum.—The plant exhibited had two fine spikes bearing large pleasing flowers of good shape. The sepals and petals are white, the lip white flushed with a zone of dark rose colour.

C. President Wilson var. magnificum—A fine spike of somewhat wingy flowers of exquisite and unique colouring, yellow, golden-brown and crimson being the prevailing tints.

C. Redstart var. elegans.—A beautiful spike, of perfect habit, the well-formed flowers giving an impression of cream-coloured satin.

C. Cygnet, Holford's var.—This plant shows a distinct break in colour, the sepals and petals being an art shade of terra-cotta and contrasting well with the sulphur-powdered lip. All the foregoing were exhibited by Lieut.-Col. Sir GEORGE HOLFORD.

GROUPS.

Lt.-Col. Sir GEORGE HOLFORD, K.C.V.O. (gr. Mr. H. G. Alexander) exhibited a group of eighteen Cymbidiums raised at Westonbirt. In addition to those which received awards there were included, C. Alexanderi roseum, C. Redstart splendens, C. Ringdove, C. Flamingo, C. Miranda magnificum, C. Bustard, C. Curlew aureum and C. Yellowhammer.

As a mark of appreciation of the pioneer work in Cymbidium hybridisation which has been progressively carried out at Westonbirt over many years and with such successful results, the Gold Medal of the Royal Botanical and Horticultural Society of Manchester was awarded to Sir George Holford.

Dr. CRAVEN MOORE (gr. Mr. Gilden) staged a brightly coloured group of Odontiodas and Odontoglossums, including Odontoglossum Orestes, Odm. Pyramus, Odm. Princess Yolando, Odontioda Red Cross, Oda. Mrs. Ogilvie, and Oda. Gladys.

A. T. CUSSONS, Esq. (gr. Mr. F. Cookson) staged a large mixed group, including Lycaste Skinneri, Cusson's var., Phaius Marthae, P. Sanderianus, Zygo-Colax Veitchii, and various Cypripediums, Cymbidiums and Dendrobiums.

Sir WILLIAM THOM (gr. Mr. R. Williams) exhibited a group of Dendrobiums, including good plants of D. King George, D. Lady Colman, D. Cybele, Athol House var., and D. Cybele alba.

B. J. Beckton, Esq. (gr. Mr. W. A. Stewart) exhibited an interesting selection of species and modern hybrids, among which mention may be made of Dendrobium Radiance, D. Magda, Laelia cinnarbarina and its hybrid with L. harpophylla; Bulbophyllum Dayanum, a well-flowered plant of Coelogyne sparsa and cut flowers of the unique Arachnanthe Cathcartii, Sander's var.

F. T. Paul, Esq. staged a good variety of Miltonia Bleuana.

F. T. Hanbury, Esq., V.M.H. (gr. Mr. J. Matthews) exhibited an interesting selection of cut flowers of Dendrobium hybrids raised at Brockhurst, namely, D. Gatton Monarch in several fine varieties; D. Miss F. E. King, D. chessingtonense and a new, umamed hybrid between D. chessingtonense and D. Melpomene.

ROYAL HORTICULTURAL.

March 24 and 25.—The usual fortnightly meeting was held on Tuesday and Wednesday last in the Vincent Square Hall, Westminster. The exhibition was almost sufficient to fill the large building and included Orchids, forced shrubs, spring bulbous flowers, alpines, Carnations and Roses. Several fine new Daffodils received awards, also two new Rhododendrons and a blue-flowered Primula.

Orchid Committee.

Present: C. J. Lucas, Esq. (in the chair), Gurney Wilson (Secretary), James O'Brien, J. Wilson Potter, Richard G. Thwaites, S. W. Flory, E. R. Ashton, John C. Cowan, T. Armstrong, A. A. McBean, J. E. Shill, Fred. K. Sander, H. G. Alexander, Charles H. Curtis, H. T. Pitt and Fred J. Hanbury.

AWARD.

A Preliminary Commendation was awarded to Odontioda Viscountess Folkestone (Oda. Coronation × Odontoglossum l'Empereur), from R. Gerrish, Esq., Milford Manor, Salisbury (gr. Mr. Sorrell). This new seedling is of great promise and was shown with its first flower, a large and perfectly shaped bloom with white ground heavily blotched with ruby-purple, the tips and margins being mauve coloured.

GROUPS.

A Silver Banksian Medal was awarded to Messrs. Sanders, St. Albans, for an effective group with Cymbidiums at the back, varieties of C. Ceres and the hybrids raised from it being conspicuous, a variety of C. Ceres roseum with a ruby-red band on the lip being specially distinct. Among the Brasso-Cattleyas B.-C. St. André (C. Dowiana × B. nodosa) is a pretty flower of medium size with emerald-green sepals and petals and broad, rose-veined lip. A good selection of Laelio-Cattleyas was shown, the most striking being L.-C. Royal Sovereign superba, the large flowers having copper-orange sepals and petals and a ruby-purple lip. Among the Cattleyas was the new C. Capitol (Trianae ignea × Syros) a large and showy flower, and C. Monarch a fine variety. The scarlet Odontioda Lambeauanum and others gave fine effect. Oda. aurantiaca, species of Dendrobium and a good selection of Dendrobium hybrids were all of interest.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for an excellent group of Odontoglossums, Odontiodas and Odontoglossums, with finely-flowered Cymbidiums at the back. Varieties of Odontoglossum crispum were good and varied, O. Faustina Low's variety being specially fine. Among rare species Schomburgkia undulata, Dendrobium atroviolaceum, D. Brymerianum and fine forms of D. Wardianum and hybrids were noted, while a plant of Oncidioda Stuart Low with thirty bright red flowers was one of the most conspicuous features in the group.

OTHER EXHIBITS.

Harry Worsley, Esq., Haslingden, showed Odontoglossum crispo-Solon var. Ruth, one of the finest forms of this famous hybrid, with large white flowers of firm substance bearing in the middle of each segment a cluster of rich violet-purple blotches.

Baron Bruno Schröder, The Dell Park, Englefield Green, (gr. Mr. J. E. Shill) sent a spray of a very handsome seedling from his Dendrobium Model which had previously secured a First Class Certificate and is one of the best Dendrobes; also his Odontioda The Dell Duchess with a fine spray of scarlet flowers with white front to the lip and which received an Award of Merit when he first showed it.

Messrs. Flory and Black, Slough, showed their new Odontoglossum Falstaff (Portia × eximillus), a fine flower with the inner parts of the white segments blotched with purple; the new Sophro-Lælio-Cattleya Vulcan (L.-C. Dowiniana × S.-L.-C. Anzac), a Cattleya-like flower with bright violet sepals and petals and ruby-purple lip; a finely-flowered Odontioda Rubicon and Brasso-Cattleya Nena, Langley variety.

Messrs. A. J. Keeling, Westgate Hill, Bradford, staged a good selection of Orchids, comprising Dendrobium Ashworthiæ, the rare white species of the D. atroviolaceum section, which was also shown; D. Aurora and other hybrids, Cymbidium Emerals, some good Odontoglossums, and Cypripedium Daisy Barclay (Godefroyæ × Rothschildianum) which is one of the darkest of Cypripediums, the flower being lined and tinged with blackish-purple.

Floral Committee.

Section A.—*Present:* Messrs. H. B. May (in the chair), J. F. McLeod, Arthur Turner, H. J. Jones, J. M. Bridgeford, W. Howo, Donald Allan, M. C. Allwood, E. R. Janes, G. W. Leak, F. Streeter, H. R. Darlington, F. G. Cousins, D. B. Crane, W. P. Thomson, Chas. E. Pearson, J. B. Riding, and D. Ingamells.

Section B.—*Present:* Mr. Chas. T. Musgrave (in the chair), Sir Wm. Lawrence, and Messrs. Jas. Hudson, W. J. Bean, G. W. Loder, W. B. Cranfield, G. Harrow, C. Williams, E. H. Wilding, A. Bedford, T. Hay, E. A. Bowles, Amos Perry, F. G. Preston, R. W. Trotter, G. Yeld, Reginald Cory, R. C. Notcutt, and Clarence Elliott.

AWARDS OF MERIT.

Primula Bunty.—A handsome Primrose somewhat after the P. Juliae type, but very free-flowering. The blooms are large and finely formed; rich violet-blue with a small yellow eye. Shown by Messrs. Bakers.

Rhododendron Bernard Gill.—This effective early-flowering Rhododendron appears to be a member of the Cornubia class. The widely campanulate flowers are borne in large, compact trusses and the colour is soft rose-red. The crimped margins to the blooms are an added attraction. Shown by Messrs. R. Gill and Son.

Rhododendron Fireball.—A brilliantly handsome early flowering variety, with broadly campanulate blooms. The latter are of a rich carmine-scarlet colour and have slightly frilled margins. We counted eighteen flowers in one of the large trusses. Shown by Messrs R. Gill and Son.

GROUPS.

Forced shrubs were prominently shown by several exhibitors. Messrs. L. R. Russell had a very charming display against the end wall. Rhododendrons, mostly of the species and varieties grown in greenhouses, were an important feature, as these included the old favourites Countess of Haddington, Countess of Sefton and R. Gibsonii superba. Several good forms of Wistaria sinensis, deciduous Azaleas, Pyruses, and Clematis were also well shown. (Silver-gilt Banksian Medal).

The Rhododendrons shown by Messrs. R. Gill and Son including branches of R. ciliicalyx and R. albescens of delicate beauty. R. argenteum, R. Cornubia, and various R. arboreum hybrids were also of great value and were obviously garnered from out-of-doors. Large quantities of St. Brigid Anemones and a Primula Juliae variety were also included. (Silver Banksian Medal).

A goodly variety of early-flowering Rhododendrons, mostly as single trusses, were shown by Mr. G. Reuthe, who also had other shrubs and alpine plants. (Silver Banksian Medal).

Vivid masses of the mollis type of Azalea were arranged by Messrs. R. and G. Cuthbert. These included mollis × sinensis hybrids, and along the back they disposed splendid little plants of Cerasus Hisakura in full bloom. (Silver Banksian Medal).

There were the customary little rockeries and collections of alpines, but some of them bore the imprint of hurried construction and indifferent planting, though there were a few notable exceptions. Messrs. Wm. Cutbush and Sons filled a corner space by the tea annexe with what would have been a particularly charming exhibit had only the front line been finished with plants instead of the yellowish material. With this exception, which probably could not have been avoided in the circumstances, it was a very satisfying arrangement (Silver Banksian Medal).

The arrangement of the low rockery set up on the staging by Messrs. Carter Page and Co. was very successful, and provided suitable places for many Primulas, Saxifrages, Narcissus cyclamineus, and similar tiny sorts. At the back there was a good selection of appropriate shrubs (Silver Banksian Medal). A very interesting exhibit of alpines in pans was made by Mark Fenwick, Esq. (gr. Mr. F. Tustin), Abbotswood, Stow-on-the-Wold, Gloucestershire. This embraced a useful variety of plants and evidenced very skilful cultivation (Silver-gilt Banksian Medal).

Messrs. Bakers, Ltd., had a very good collection of spring flowers. In addition to many Saxifragas there were pans of Soldanella. Narcissus triandrus and many other useful alpines, with such shrubs as Daphne Cneorum, Cytisuses, Viburnum Carlesii and Gaultheria procumbens bearing its relatively large brilliant berries (Bronze Banksian Medal).

Mr. Clarence Elliott had a large pan of Saxifraga Grisebachii and also showed varieties of S. oppositifolia, particularly Wetterhorn and splendens (Silver Banksian Medal). Saxifraga Rob Roy and similar brightly coloured varieties was prominent in a collection arranged by Messrs. Maxwell and Beale, while the Misses Hopkins included many blue Primroses of good colour in their exhibit. A small rock-garden was also arranged by Messrs. Sheppards, Ltd., and planted with Iris bucharica, Primula frondosa and other alpines. They also had many Polyanthuses. Messrs. Skelton and Kirby also showed gently forced alpines and other plants on a small rockery (Bronze Banksian Medal).

Saxifraga oppositifolia varieties, S. Sundermannii (of Kew), S. apiculata, Daphne Cneorum and various other rock-garden plants were shown by Messrs. R. Tucker and Sons (Silver Banksian Medal). Similar Saxifrages were also well shown by Messrs. Waterer Sons and Crisp. Other desirable alpines included the blue Omphalodes verna of rich colour, Narcissus nanus and Fritillaria Meleagris (Silver Banksian Medal).

Daphne Mezereum was particularly noticeable in the exhibit of Mr. F. G. Wood, who also showed Cytisus praecox, Deutzia gracilis and other decorative plants (Bronze Banksian Medal). Gentiana acaulis, of rich blue colour, Pulmonaria angustifolia Azure and Primula Juliae were arranged on a rock-garden by Messrs. M. Prichard and Son (Silver Banksian Medal), while Messrs.

W. H. Rogers and Son planted their rock-garden with Morisia hypogaca, Lithospermum Heavenly Blue and various dwarf shrubs (Silver Banksian Medal).

Mr. George G. Whitelegg massed excellent spikes of Iris tingitana, dwarf Japanese Azaleas, Saxifraga Irvingii, S. lilacina and Androsace Chumbyi Brilliant. (Bronze Banksian Medal). Mr. Arthur Pratt and Messrs. Blackmore and Langdon both exhibited excellent strains of Polyanthuses. (Bronze Banksian Medals). A good collection of Polyanthuses was also shown by Mr. S. A. Miller, who also showed Dielytra (Dicentra) spectabilis, Primula denticulata and Fritillaria Meleagris. (Bronze Banksian Medal). Messrs Reamsbottom and Co. had their customary collection of Anemones; Mr. Baldwin Pinney showed Violets, and Mr. J. Klinkert exhibited topiary specimens.

A large collection of Carnations was well arranged by Messrs. Allwood Bros. The fancy varieties were prominently shown and these included El Dorado, Coral Glow, Chintz, and Wivelsfield Apricot. The comparatively new Shot Silk, of bright Indian Red colour was also well shown. (Silver-Gilt Banksian Medal).

Many vases of Carnations were also staged by Mr. C. Engelmann, who had good blooms of Cupid, Laddie, Peerless, Aviator, Nigger and other useful varieties. (Silver Banksian Medal). Messrs. Stuart Low and Co. had large vases of Winsome, Betty, Jane, Eileen Low, and other pink Carnations adjoining an interesting collection of Acacia armata, A. leprosa, A. cordata and Hippeastrums. (Silver Banksian Medal). Under the clock Messrs. Sutton and Sons staged plants of Cineraria hybrids of a new intermediate type in lovely colours. (Bronze Banksian Medal).

Fresh and bright Roses were set up by Mr. Elisha J. Hicks, whose chief varieties were America, Mrs. Elisha J. Hicks, Climbing Lady Hillingdon, and Chas. E. Shea (Silver Banksian Medal). Mr. George Prince showed Florence Haswell Veitch, Climbing Richmond, Edith Cavell, and Madame Butterfly Roses.

Narcissus and Tulip Committee.

Present ; Messrs. E. A. Bowles (in the Chair) P. D. Williams, W. B. Cranfield, F. Herbert Chapman, J. W. Jones, Herbert Smith, Reginald Cory, P. R. Barr, C. W. Needham, Alfred W. White, G. W. Leak, Charles H. Curtis, W. Poupart, J. D. Pearson, Geo. Monro, Geo. Churcher, and the Rev. J. Jacob.

Awards of Merit.

Tulip Helenium.—A very showy variety of the Murillo type. The big blooms are double but not too solid, and when fully expanded they are very effective. The colour is clear, Buttercup-yellow. Shown by Messrs. Sutton and Sons.

Narcissus White Nile.—A beautiful, white Trumpet variety, which obtained an Award of Merit for show purposes in 1922 and was granted an Award on this occasion for market and garden cultivation. The perianth is white and the trumpet pale cream colour. Shown by Mr. L. Richardson, Waterford.

Narcissus Godrevy.—An opulent Trumpet Daffodil (I, *a*), beautifully proportioned . and of a rich, golden-yellow colour. The trumpet is very wide and has a broad, recurving, frilled rim ; the perianth segments are wide and finely formed. Award granted for show purposes.

Narcissus Bodilly. — A charming Giant Leedsii (IV, *a*) variety ; with broad, but bluntly-pointed, white perianth segments and a rather straight, yellow-frilled trumpet. Exhibited for show purposes.

Narcissus Milkmaid.—Another Giant Leedsii variety (IV, *a*), of great beauty. It has broad, white, perianth segments, but the inner three are pointed ; trumpet pale yellow, with paler shading at the frilled rim. Award granted as a show variety.

Narcissus St. Winnow.—In this chaste Giant Leedsii form (IV, *a*), the white flowers have pointed perianth segments of considerable substance, and a broad, frilled trumpet. Award granted as a show variety.

Narcissus Dominick.—One of the finest formed flowers in a wonderful set. The colour is deep golden-yellow all through. Although classed as an incomparabilis form (II, *a*), it has a rounded, frilled trumpet, as in many Ajax sorts, but shorter than is admissible in the latter section. The whole flower is finely proportioned, substantial in texture, fine in colour, and well poised on a stout stem. Exhibited as a show variety.

Narcissus Damson.—A showy, incomparabilis variety (II, *a*), but it was impossible to find a reason for its name. The broad, perianth segments are rich, cream-coloured, and the trumpet cream, stained with red, the latter colour also appearing at the bases of the perianth segments. A show variety.

The foregoing seven fine novelties were shown by Mr. P. D. Williams, St. Keverne, Cornwall.

Groups.

On a floor space Messrs. Sutton and Sons had a Gold Medal exhibit of double-flowered Dutch Tulips. The general idea of the arrangement was twin circular beds, on low eminences, with longitudinal beds radiating from them. The round beds were planted with dark red varieties and the radiating beds contained separate varieties of different colours. The association of various colours in juxtaposition always presents difficulties, but Messrs. Sutton and Sons handled the different shades so skilfully as to make a harmonious whole. The central varieties were Vuurbaak and Luminosa, while radiating were Apple Blossom, Murillo, Salvator, Queen of Pinks of similar shades, Azalea, a delightful mixture of pink shades; Sunset, yellow and scarlet; Mr. Van Tubergen, rich yellow, and Mystern of India, of fascinating metallic buff sheen (Gold Medal).

Narcissi were freely shown and of considerable merit, in a splendid collection tastefully arranged by Messrs. Barr and Sons. There were several vases of seedling Incomparabilis varieties of distinctly superior merits to the standard varieties. The blooms were very large, of good substance, and carried large, brilliantly coloured coronas. Of the named varieties Croesus and Sunrise were especially good, while Bernardino attracted a deal of attention. There were also many good large Trumpet varieties, and in addition to some very promising seedlings, Aerolite of soft yellow colouring; Fantin Latour, rich yellow; Nero, bicolor, and Yorick, rich yellow, were of considerable merit. (A Silver-gilt Banksian Medal was awarded but a higher award would not have been extravagant).

In a noteworthy collection arranged by Messrs. J. R. Pearson and Sons the large Trumpet varieties included Louise L. Linton, bicolor; Capelle, sulphur-yellow, bicolor; Vertan, deep sulphur tube; Hon. Mrs. J. L. Francklin and White Dare, all of large size and paler shades of colour. John Cairns, deep yellow, and Whistler, pale yellow perianth and deeper tube, were also worthy of special mention. Besides the foregoing, this collection contained some very good poeticus and Barrii varieties (Silver-gilt Banksian Medal).

Messrs. Dobbie and Co. had a large collection of Poetaz Narcissi growing in shallow pans of soil. Those with white perianths included Alsace, Aspasia, Elvira, Lucrece, Sycamore and Triumph, while chief amongst the sorts with pale yellow or cream perianths were Admiration, Bouquet Enorme, Halmon and Sovereign. (Silver Banksian Medal).

A collection set up by Mr. J. L. Richardson included Golden Chariot, a showy large Trumpet; Slivenamon, of similar colouring; and Silvo, a paler yellow. Medusa and Glorious of the Tazetta section were good examples. (Silver Banksian Medal). Mr. J. W. Barr had a small collection, obviously cut from the open ground. These were sturdy and of full colour. The chief sorts were King Alfred, Lucifer, Blackwell and Poeticus ornatus. (Bronze Banksian Medal).

An excellent exhibit of bulbs growing in bowls of fibre was again made by Messrs. R. H. Bath, Ltd. Darwin Tulips predominated, and these included Mrs. Potter Palmer, King Harold, White Queen, Atala, W. R. Verboug, Eclipse, and The International. They also showed Irises, Chionodoxas and Scillas grown similarly and with equal success. (Silver-Gilt Banksian Medal).

Fruit and Vegetable Committee.

Present :—Messrs. A. H. Pearson (in the chair), J. Cheal, W. Poupart, H. S. Rivers, G. F. Tinley, W. Giles, A. Bullock, F. Jordan, E. Neal, G. Woodward, W. H. Divers, H. Markham, A. N. Rawes and John Basham.

The members of the Committee congratulated the Secretary, Mr. A. N. Rawes on being present again after his long and severe illness.

The only exhibit of importance was a collection of twelve varieties of Apples representing some of the choicest sorts in season, staged by Messrs. G. Bunyard and Co., Ltd. The varieties were as follow: Alfriston, Heusgen's Golden Reinette, Stark, Barnack Beauty, Ontario, Allen's Everlasting, Norman's Pippin, Sturmer Pippin, Wagener, Sir John Thornycroft, Brownlees Russet and Edward VII.

WESTERN COMMERCIAL HORTICULTURAL.

The second Western Commercial Horticultural Show was held at Penzance on March 12 and 13. The event held in 1924 was probably the first of its kind in this country, its main aim being to popularise British produce.

The support received at this show was extraordinary, and exhibits came from all over the country. The show had the support of the Ministry of Agriculture, the Controller and Deputy Controller being present, whilst leading salesmen, such as Messrs. George Monro (London), Clarke (Sheffield), Craze (Leeds), Gale (Leeds), Kent (Cardiff), and leading growers like Messrs. G. R. Wellband, Hayes and Baxter, of Spalding, gave their support. The Royal Horticultural Society was represented by Mr. F. J. Chittenden, whilst among local horticulturists the show was fortunate in having the support of Lord St. Levan (president), Rev. A. T. Boscawen (chairman), the Lord Lieutenant of Cornwall, J. C. Williams, Esq., P. D. Williams, Esq., and other well-known local enthusiasts.

The propaganda campaign of the secretary (Mr. H. W. Abbiss) was such that growers came in from all parts of the West Country, and the hall available in Penzance was inadequate to accommodate the influx of visitors. Something like two-thousand-five-hundred people attended the show.

The competition in all classes was particularly keen, but in the case of the packed Narcissi the judges had a very difficult task ; about eighteen boxes were entered. The prize-money for the crated Broccoli was very large, owing to the generosity of Messrs. Shearns (London) and Flook (Newport), and this attracted a goodly number of competitors. All the packed exhibits at this year's exhibition showed a distinct advance on last year's effort. This demonstrates that the educational purpose of the show has been achieved. Exhibits in the Narcissi and bunched-Violet classes came from so far as Spalding and Jersey. The non-competitive and trade exhibits were most creditable, the display of seedling and new Narcissi by Mr. P. D. Williams being unique.

Shrubs were exhibited by the Rev. A. T. Boscawen, and, as usual, these were much admired by visitors. T. R. Bolitho, Esq., of Trengwainton, also put up a very choice display of flowering plants. Messrs. Barr and Sons, of London, had a very fine exhibit of Narcissi, and this received a First-Class Award of Merit. Messrs. Tresider, of Truro, for Shrubs; Rough Lee Flower Farm, Newlyn, Penzance, for floral designs; and Messrs. Sutton and Sons, Reading, for Vegetables, also received First-Class Awards of Merit.

Mr. T. Matthews, Gulval, secured first prizes for trimmed Broccoli, for Broccoli raised and grown by the exhibitor, for a package of Broccoli other than a crate, and for Cabbages. Mr. J. Pengelly, Penzance, was also successful in several vegetable classes, and Col. Paynter, St. Buryan, led for forced and also for natural vegetable crops, and for a collection of commercial market garden produce. Mr. E. B. Champernowne, Truro, showed the best non-returnable package of Trumpet Daffodils in the class open to growers in Cornwall and the Isles of Scilly; the same exhibitor led for a collection of Narcissi, and won several other prizes, including the best exhibit packed in the show. Poeticus Narcissi were best shown by Mr. H. Gooding, Isles of Scilly, who was also successful in the class for medium-cupped Narcissi. Mr. B. Baxter, Spalding, led for yellow Narcissi and for bicolor or white Trumpet Daffodils.

Mr. J. J. Jenkin, Isles of Scilly, won first prizes for St. Brigid Anemones and for Anemone fulgens. Mr. E. Prewett, Devoran, had the best package of Violets. Mrs. Whale, Mr. F. Tregonning, Mrs. J. Wallis, Messrs. W. and J. Wood, Rough Lee Flower Farm, Miss Bulkeley, and Messrs. Avis and Son, were other successful competitors.

In the amateurs' section, Mr. F. G. Lawson, Truro; Mr. R. J. Blewett, Gulval; Mr. John Wallis; Miss Fox, and Mrs. T. E. Matthews, were the leading prize winners.

The value of this two-days' educational show was considerably enhanced by the conferences, demonstrations, and lectures. Competitions were also held in the bunching of Violets and Narcissi and packing of Broccoli for the market. The speakers at the Flower Conference included Mr. George Monro, Mr. P. D. Williams, Mr. G. R. Wellband, and Mr. Hayes, of Spalding.

The chair at the Vegetable Conference was taken by Mr. W. G. Lobjoit, whilst speakers included Mr. F. W. Clarke, of Sheffield; Mr. W. Craze, Leeds; Mr. W. Kent, Cardiff; and Mr. H. V. Taylor. The Deputy Controller of Agriculture (Mr. H. V. Taylor) gave a very interesting lecture on Colonial Methods of Growing and Marketing.

The nucleus of an association was also formed on the second day, and it is hoped that the growers will obtain distinct advantages from an amalgamation of this kind.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, March 20.—Committee Present: The Rev. J. Crombleholme (in the chair), Messrs. R. Ashworth, A. Burns, A. Coningsby, J. Cypher, J. Evans, A. Keeling, J. McCartney, E. W. Thompson, and H. Arthur, Secretary.

First-Class Certificates.

Odontoglossum crispum, Stanley Baldwin.—A large, white, well-shaped flower four inches across, with broad, fimbriated petals. From Mrs. Gratrix.

Odontglossum Rosina, West Point variety, (eximium × Lady Pirrie).—A flower of good shape; the colour is bright claret with a narrow edging of white. From S. Gratrix, Esq.

Cattleya Douaii var. Queen Mary.—A very fine variety. The blooms are over eight inches across with broad, pure white petals, the lip having lemon lines. From Mr. J. Evans.

Awards of Merit

Odontoglossum Alderley and *Odontioda Meteor, West Point variety.* From Mrs. Gratrix.

Odontoglossum Chocolate Soldier and *Cypripedium Cardemona, Haddon House variety (Carola × Desdemona).* From P. Smith, Esq.

Oncidium Hey House variety, one of the O. macranthum hybrids. From J. McCartney, Esq.

Groups.

S. Gratrix, Esq., West Point (gr. Mr. C. Branch), staged a group which was awarded a Silver-Gilt Medal.

A Silver-Gilt Medal was also awarded to Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns), for a miscellaneous group of Orchids.

Messrs. J. Cypher and Sons, Cheltenham, staged a group which was awarded a large Silver Medal.

LAW NOTES.

BANKRUPTCY PROCEEDINGS.

At a meeting of the creditors of John L. Carvel, Main Street, Alexandria, of the *Scottish Gardener*, the Trustee in the sequestration, Mr. Walter Galbraith, stated that the money promised by the bankrupt in his public examination had not been paid, but that a relation had assigned twenty shares in a local gas company of an estimated value of £8 each. The book debts of £148 10s. were valued at £50, making the total assets £210, equivalent to a dividend of 9s. 1d. per £, subject to the expenses incurred in the sequestration.

SEED POTATOS.

In the Court of Session, on Tuesday, Lord Ashmore delivered judgment in an action at the instance of R. and S. Paton (1921), Ltd., Potato Merchants, Edinburgh, against Robert Wyllie, farmer, The Heugh, North Berwick, for payment of £1,467 8s. 1d. as damages for breach of contract. Briefly stated the pursuers case was founded on a purchase made from the defender in January, 1923, of 400 to 500 tons of King Edward Potatos at the rate of 40/- per ton, seed dressed on 1¼-inch and through a 2-inch riddle, and at the rate of 30/- per ton for ware dressed on a 2-inch riddle, and that it was an express condition of the sale that the Potatos should be properly dressed and any wrong tubers kept out. The seed Potatos were sold to various sub-purchasers who claimed damages against the pursuers on the ground that the Potatos were mixed. The sum sued for represented the amount the pursuers had to pay and also a further sum of £1,000 for loss and damage sustained by the transaction.

After a lengthy proof his lordship decided in favour of the defender and found him entitled to expenses. He expressed the opinion that the defender did not sell pure King Edward seed Potatos but sold mixed Potatos and that he did not agree to keep out the rogues. The evidence showed that before negotiations were began the pursuers knew that the Potatos were King Edward mixed with other varieties, and that the letter sent by the pursuers to the defender confirming the bargain incorrectly set forth that the bad or wrong tubers were to be kept out. It was proved—

> (*a*) that it was quite exceptional to try to pick out wrong varieties in the course of dressing Potatos as they were passing over a moving riddle because of the difficulty of distinguishing and eliminating the rogues in motion; (*b*) that the defender, who had been selling Potatos for over thirty-five years, had never before been asked to take out rogues under similar conditions, and the witnesses experienced in the growing of Potatos had never known of rogues being picked out after the Potatos had been lifted from the field and pitted; (*c*) that the proper time was when the Potatos were growing and the bloom was on them, when it was comparatively easy to distinguish different varieties from the shaws; and (*d*) that when, as in this case, the Potatos were badly mixed, it would be practically impossible for the women to observe and pick out more than a limited proportion of the rogues.

The evidence showed that the defender had acted fairly towards the pursuer and had done his best to secure that the rogues be taken out. Moreover, the pursuer's salesman twice or three times a week watched the work of dressing the Potatos and was satisfied that it was being done properly. There was no evidence to the contrary. The mere fact that the rogues were only partially eliminated and that the tubers used as seed had produced a badly mixed crop was not inconsistent with the case which the defender had agreed to undertake. It was right to add that in his lordship's opinion the claim for damages was clearly ill-founded, for although the Potatos were admittedly mixed varieties, the pursuers sold them as King Edward seed Potatos without qualification and, therefore, in effect, guaranteed them to be true to name to the extent of ninty-five per cent. That meant that in making their sub-contracts they did not rely upon any guarantee given by the defender which he had failed to implement. It followed that the defender was not responsible to the pursuers for damages which they had sustained because of a representation which the defender did not make to them, but which they, without his authority, express or implied, and without his knowledge took upon themselves to make to their sub-purchasers.

ANSWERS TO CORRESPONDENTS.

Names of Fruit: *F. J. R.* 1, Court Pendu Plat; 2, Lord Derby; 3 and 4, Lane's Prince Albert; 5, Hambling's Seedling.

Names of Plants: *Uncertain.* 1, Sagina glabra var. pilifera; 2, Sedum hispanicum var. minus; 3, Helxine Solierolii; 4, Sedum album; 5, Sedum rupestre; 6, Poterium sanguisorbifolia; 7, Pieris floribunda. *Regular Reader.* 1, Erica carnea variety; 2, Euonymus japonicus variegatus; 3, probably Melissa officinalis; 4, Anemone Hepatica var. flore plena. *Mrs. W.* Helleborus colchicus. *W. A. S.* Jasminum nudiflorum. *Mrs. B.* Helleborus viridis.

Sulphuric Acid and Water: *S. F. O.* Pouring large quantities of sulphuric acid into water, or large quantities of water into sulphuric acid has the same effect, if they are brought together at once. The chemical change that takes place instantaneously has the effect of causing great heat to be evolved. This heat should be allowed ample space and time to escape as it is being produced. If water were poured into a narrow-necked bottle of sulphuric acid, or into the bung-hole of a barrel of sulphuric acid containing no other opening, there would be an explosion Not merely the first drops of water poured on the acid, but the whole quantity is concerned in the results until the acid gets hydrated. In the answer to a correspondent on page 138, the advice was to put the iron sulphate into a barrel and pour the sulphuric acid over it and dissolve it. The next process was to pour in the water gradually. Presumably no one would think of preparing a solution for spraying or watering a path other than in a tub or similar vessel fully open at the top. When water is poured into this slowly the great heat keeps escaping all the time.

Communications Received.—H. M. P.—A. R.—W. K.—G. A. H.—L. G. W.—H. C. B.—S. E. F.—A. D. W.—H. W.—W. A.—H. F.—G. W.—R. H. J.—H. G.—F. K. W.—A. O.—J. C.

MARKETS.

COVENT GARDEN, Tuesday, March 24, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldii ...	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Azaleas, per doz.	15 0–33 0
Cacti, per tray, —12's, 15's ...	5 0– 7 0
Cinerarias, doz.	15 0–24 0
Crotons, per doz.	30 0–45 0
Cyclamen—	
—32's	36 0–48 0
—48's	24 0–30 0

	s. d. s. d.
Cyrtomium ...	10 0–15 0
Erica melanthera, 48's per doz. ...	21 0–30 0
— —60's, per doz.	8 0–10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0– 4 0
Marguerites, white, 48's, per doz. ...	18 0–30 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia ...	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's ...	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 6

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun. ...	12 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays ...	1 6– 2 6
short „ ...	0 9– 1 3
—Sprengeri, per bun.	
long sprays ...	1 6– 2 0
medium „ ...	1 0– 1 6
short „ ...	0 4– 1 0
Azalea, white, per doz. bun. ...	9 0–10 0
Bouvardia, white, per doz. bun ...	12 0–15 0
Camellias, White, per box ...	3 6– 4 0
Carnations, per doz. blooms ...	3 0– 5 0
Croton leaves, var., doz. leaves	0 9– 2 6
Daffodils—	
—Emperor, per doz. bun. ...	10 0–12 0
—Golden Spur, per doz. bun. ...	3 0– 5 0
—King Alfred, per doz. bun. ...	10 0–12 0
—obvallaris, per doz. bun. ...	3 0– 5 0
—Sir Watkin, per doz. bun. ...	5 0–10 0
Fern, French, per doz. bun. ...	0 9– 1 3
Freesia, per doz. bun., special ...	6 0– 8 0
—White, per doz. bun.	2 6– 3 0
—Special, long, per doz. bun. ...	9 0–12 0
Galax, American, green and bronze, per doz. bun. ...	— 3 0
Iris tingitana, per doz. spikes ...	5 0– 6 0
Lilac, Dutch, per spikes	4 0– 8 0
Lilium speciosum rubrum, long, per doz. blooms ...	4 0– 5 0
—short „ „ ...	3 0– 4 0
Lilium longiflorum long, per doz. ...	7 0– 8 0
Lily of the Valley, per doz. bun. ...	24 0 36 0
Narcissus—	
—Scilly White, per doz. bun. ...	3 0– 7 0
—ornatus, per doz. bun. ...	5 0–10 0
Orchids, per doz.	
—Cattleyas ...	24 0–30 0
—Cypripediums ...	5 0– 7 0

	s.d s.d.
Primroses, per doz. bun.	2 6– 4 0
Prunus triloba (Dutch), per bun.	1 0– 1 6
Richardias (Arums) per doz. ...	7 0– 9 0
Roses, per doz. blooms, Richmond ...	4 0– 8 0
Ruscus, French, per bun. ...	1 0– 2 0
Smilax, per doz. trails	2 0– 3 0
Sweet Peas, per doz. bun. ...	15 0–18 0
Tulips, per bunch—	
—Bartigon ...	1 6– 3 0
—Clara Butt ...	2 0– 3 0
—Couronne d'Or	2 0– 2 6
—La Reine ...	1 6– 2 6
—Prince of Austria	1 9– 2 0
—Wm. Copland...	2 0– 2 6
Violets, per doz. bun	2 0– 4 0
French Flowers—	
Anemone, dble. pink, per doz. ...	3 6– 5 0
—De Caen, mixed, per doz.... ...	8 0– 9 0
—single blue, per doz.	3 0– 4 0
Carnations, per bun	1 6– 2 0
Freesia, long, per pad	14 0–15 0
Marguerite, yellow, per pad	8 0–10 0
Marigolds, per pad	7 0–10 0
Mimosa, per pad	8 0–15 0
Narcissus—	
—Grand Primo, per doz. bun. ...	2 6– 5 0
Ranunculus, double scarlet, doz bun.	8 0–10 0
—Carmine, per doz. bun ...	8 0–12 0
Star (Allium), per pad, 48's ...	10 0–15 0
Stock, double white, per pad 24 bunches ...	7 0–10 0
—double coloured	7 0–10 0
Violets, Parma, per bun. ...	3 0– 3 6
—single, per pad	6 0– 8 0
Wallflowers, per pad	5 0– 8 0

Remarks.—The cold weather has not improved trade and business is not brisk in view of the approach of Easter. Daffodils from out-of-doors are coming in very slowly and this tends to keep up prices. Tulips are not over-abundant and are maintaining good value. Roses are more plentiful; the supplies of Lilium longiflorum and Richardias are on the short side. Violets are plentiful. Supplies of Carnations are sufficient for present demands.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Albemarle ...	40 0–55 0
—Oregon Newtown	16 0–18 0
—Bramley's Seedling—	12 0–18 0
—Californian Newtown ...	15 0–16 0
—Stark	26 0–30 0
—Baldwin ...	26 0–30 0
—Lane's Prince Albert	10 0–14 0
Bananas, singles	16 0–25 0
—doubles	17 0–27 6
Grapes—	
—Belgian Colmar, per lb.	2 9– 3 6
Grapes, South African—	
—White Hanepoot	7 0–10 0
—Red Hanepoot	8 0–10 0
—Barbarossa ...	— 12 0
—Rosaki	9 0–12 0
Grape Fruit, Cuban	20 0–24 0
—Jamaica ...	20 0–25 0
—Florida	22 6–27 6

	s. d. s. d.
Lemons, Messina, per box	8 0–12 0
—Naples	18 0–24 0
Oranges, Jaffa ...	16 0–17 0
—Spanish—	
—300's	16 0–40 0
—360's	13 0–30 0
—504's	14 0–26 0
—Messina Blood	— 16 0
Pears, South African—	
—Beurre Bosc ...	4 0– 6 0
—Beurré Hardy...	4 0– 6 0
—Louise Bonne of Jersey ...	4 0– 6 0
Pines	2 0– 4 6
South African Peaches... ...	4 0–12 0
—Nectarines ...	5 0–10 0
—Plums, Kelsey	7 0–10 6
Strawberries, per lb.	12 0–30 0
Tunis Dates, doz.	5 0– 6 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	1 6– 2 0
—Worthing ...	1 6– 2 0
—Madeira, per box	3 6– 8 0
Beets, per cwt....	4 6– 5 0
Cabbage, per tally	10 0–12 6
Canary Island Tomatos ...	16 0–22 6
Cauliflowers, per doz.	3 0– 5 0
Forced Mint, per doz.	4 0–10 0
Celery, best, washed, per bundle ...	1 6– 2 0
Chicory, per lb....	0 4–0 6
Carrots, per bun.	0 8–0 10
—New	— —
Cucumbers, per doz.	6 0–10 0
—Flats	18 0–26 0
Dutch Onions ...	11 6–12 6
Endive, per doz	1 6– 3 6
Batavia, per doz.	3 0– 3 6
English Asparagus—	
—Best	7 6– 8 0
French Asparagus—	
—Paris Green ...	6 6– 7 6
—Lauris	4 0– 6 0
Greens, best, per bag	5 0– 6 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundles	2 6– 3 6

	s. d. s. d
Lettuce, per dozen	1 6– 3 0
—Outdoor ...	2 6– 3 0
Mushrooms, cups	3 0– 4 0
—broilers	3 0– 3 6
Onions, Valencia, per case ...	15 6–17 0
—English, per cwt.	12 6–14 0
Parsnips, per cwt.	4 0– 6 0
Peas, French, per cane	7 0– 8 0
Potatos, Canary Island, per case	8 0–12 0
—Spring crop ...	16 0–18 0
Potatos, per ton—	
—Dunbar ...	220 0–240 0
—King Edward	190 0–210 0
—White	90 0–160 0
—New Guernsey lb.	0 8–0 10
Potatos, New—	
—Algerian, per lb.	0 2½–0 3
—Azores, per case	10 0–20 0
Radishes—	
—Guernsey round	1 6– 2 0
—Guernsey long...	1 0– 1 6
—French	2 0– 3 0
Rhubarb, Forced per doz.... ...	2 0– 2 9
—"Natural" per doz.	6 0– 8 0
Savoys, per tally	12 6–15 0
Seakale, per punnet	1 6– 2 0
Spinach, per bushel	5 0– 7 0
Sweet Potatos ...	— –3 0
Turnips, new, per doz. bun. ...	10 0–12 0

Remarks.—The recent improvement in the general demand seems to be maintained as almost all arrivals are increasing satisfactorily at steady price levels. Another very large shipment of fruit from Cape Colony this week has gone out well and there are large weekly quantities still to come. The latest arrival consists mainly of Pears and Grapes with a few Plums, Peaches and Pines. The Apple trade is slightly better, prices being firmer. Some excellent Bramley's Seedling are still being marketed which for both packing and quality would be hard to beat at any time.

Choice vegetables such as forced Beans, Peas and Potatos are a fairly good trade. Rather better supplies of Asparagus from France are available. Natural Rhubarb suffered a check owing to the cold snap, which was all to the advantage of forced Rhubarb. New Potatos from the Canary Islands and Algeria met a slightly better trade. Cucumbers are coming to hand in larger quantities and prices are lower. Some Tomatos from Worthing are coming to Covent Garden in fine condition and sell at a high price. Seakale meets a good market. Mushrooms are scarce and costly. Green vegetables are being sought after and there is some reduction in supplies. The trade in old Potatos is brighter.

GLASGOW.

Business conditions during the past week were not so satisfactory as they have been lately. In the fruit section the demand was checked by the continued advance in price, and the cut flower department suffered from the inferior quality of the products. The injurious effects of the mild weather was reflected in the soft or blown blooms, and salesmen experienced difficulty in disposing of supplies at greatly reduced rates, particularly on Friday and Saturday. Tulips Tea Rose, Gris de Lin, and Couronne d'Or were as cheap as 4d. to 6d. per bunch, while Soleil d'Or, Primo, and Star Narcissi were sold at 2/- per dozen bunches. These were the lowest levels touched, but the general average on the six days works out approximately as follows:—Tulips: Bartagon, 1/- to 1/2 for 6's; Copland, 10d. to 1/1; Pride of Haarlem and Farncombe Sanders, 9d. to 1/-; No. 1 Pink, 1/3; Prince of Austria and Murillo, 8d. to 1/-; Lucretia, 8d. to 10d.; Tea Rose and Couronne d'Or, 6d. to 10d. Daffodils: Emperor, 10d. to 1/- (12's); Golden Spur, indoor, 9d. to 1/-, outdoor, 4d. to 6d.; King Alfred (English), 1/- to 1/2 (6's); Guernsey, 1/6 to 1/9 (12's); Victoria, 4/- doz.; Horsfieldii 3/-; ornatus, 6/- to 9/-. Outside grown blooms are increasing in quantity, and Golden Spur from Highfield made 4/- per doz., while Glory Narcissus, which was new to the market, realised 1/- per bunch. Carnations were cheaper at 2/- to 4/- per dozen. White Lilac averaged 6/-, and coloured 3/- to 4/-. Richardias, 5/- to 7/-; Lilium longiflorum (Harrisii) 10/-; Wallflower, 1/6 to 3/-; Lily-of-the-Valley, 2/-; Richmond Roses, 5/- to 7/-; Sunburst Roses, 10/- to 12/-; Violets, 2d. to 1/-; Snowdrops, 1/- to 1/3; Asparagus and Smilax, 1/6 to 2/-. There was a good display of pot plants, and Daffodils made 1/6 to 1/9 each; Blue Hyacinths, 1/6 to 2/-; Tulips, 1/- to 1/6; Sailors, 6d. to 8d. per doz.; and Wallflowers 1/- to 1/6 per box.

A feature of the fruit market was the further advance in the price of Apples. As the season is approaching a close, supplies have become scarcer, and competition amongst buyers was consequently keen, especially for red varieties. Baldwin ranged from 33/- to 48/- per barrel; Albermarle, 42/- to 60; Ganos, 32/- to 34/-; Ben Davis, 27/- to 32/-; Oregon Newtown, 15/6 to 18/6; Winesap, 16/- to 23/-; and Golden Ortley, 16/- to 19/-. Valencia Oranges also made dearer values, 360's averaging 15/- to 18/-; 300, 17/- to 20/-; 420 (large), 23/- to 35/-; 240, 17/6 to 22/-; and 230, 16/- to 20/-. On the other hand, Jaffas declined to 16/- and 18/-. A good business was done in Cape fruits, of which there was a wide variety in fine condition. Pears:—Williams's Bon Chretien, 4/6 to 5/6; Louise Bonne of Jersey, 5/- to 6/-; Beurré Hardy, 5/- to 6/-; Beurré Diel, 5/- to 5/6; Beurré Clairgeau, 4/9 to 5/6; and Beurré Bosc, 5/6 to 6/6. Peaches: Freestone, 8/6 to 10/-; Gladstone, 5/- to 7/-; Hermitage, 10/- to 10/6. Grapes: Hanepoot, white, 10/6 to 12/6; red, 12/- to 14/-; Belgian Black Grapes, 2/9 per pound. Grape Fruit special advanced to 27/-, and other qualities varied from 17/- to 19/-. Lemons, Murcia (300), 14/6 to 18/-; Naples, 12/6 to 18/6. Winter Nelis Pears, 16/- to 17/- half case.

Trade in new vegetables is expanding with improved supplies. Long Radish made 2/- to 2/6; round 3/- to 4/-; Cauliflowers, 5/6; Spinach, 7/- crate; Flagellot Beans, 1/3 per box; Madeira, 5/- to 6/- box; Guernsey 1/9 to 2/-. Leeks, 7/- per doz. bunches; Siboes, 5d. to 8d. per bunch; French Lettuce, 8/- per crate; Dutch, 6/- to 7/- (2½ doz.); English Cucumbers, 12/- to 15/- per doz.; Parkhall Rhubarb, 44/- cwt., other sorts, 36/- to 40/-; Valencia Onions, 15/- to 18/-; Levants and Globe, 15/-

THE WEATHER IN FEBRUARY.

No other month of the twelve so frequently produces a very low mean air pressure (one in the neighbourhood of 29½ inches, or one "bar." at sea level) at Southport, as does February; yet it is normally the driest month of the year, except April! The February now under review formed a striking exception to this remarkable rule. Yielding a mean air pressure only twice slightly surpassed for lowness in its month during the fifty-four years' local record, it was at the same time the wettest February but one (that of 1881) in the same period. But winds from all the easterly directions were much below the average, those from all westerly points being in excess. As a consequence sunshine was nearly normal, in spite of the atmospheric "pit of wet," and the weather was never seriously wintry, indeed, up to the 10th, the abnormal warmth of the two previous months continued generally, and notwithstanding a rather cool spell from the 19th to the 25th (the only touch of winter, and that a gentle one, during the season 1924-5) the month's mean temperature was 41½°, or nearly 2° above the average. The duration of sunshine was sixty-five hours, or only three hours below normal. Rain, however, fell on twenty-four days—in excess of eight, and the total amount was 4·28 inches, or no less than 2·18 inches above the average, and the afternoon was the wettest part of the twenty-four hours—a very unusual circumstance locally. Three nights were slightly frosty in the shade, and nine yielded "ground frosts." Hail fell on four dates. Scarcely any other phenomena occurred. *Joseph Baxendell, The Fernley Observatory, Southport.*

CATALOGUES RECEIVED.

T. E. Harrison and Sons, Ponteland, near Newcastle-on-Tyne.—Violas and Pansies.

D. Power and Co., Waterford.—Seeds.

John Pinches, 21, Albert Embankment, S.E. 11.—Medals, cups, trophies, etc.

GARDENING APPOINTMENTS.

Mr. R. Edwards, previously gardener to H. B. Cooke, Esq., at Davenport, Bridgnorth, Salop, as gardener to the same gentleman at Stanley Old Hall, Bridgnorth, Salop.

Mr. A. Grant, for nearly four years Gardener to Capt. B. J. Marden, Stodham Park, Liss, Hampshire, as Gardener to The Right Hon. Viscount Milner, Sturry Court, Sturry, Kent.

SCHEDULES RECEIVED.

Brighton, Hove and Sussex Horticultural Society.—Summer exhibition to be held on July 8 and 9; Chrysanthemum Show on November 10, 11 and 12.—Secretary, Mr. H. J. Bingham, 128, Queen's Park Road, Brighton.

Taunton Dene Horticultural Society.—Fifty-third annual show to be held in The Park, Taunton, on Wednesday and Thursday, August 12 and 13.—Secretary, Mr. F. J. J. Stacey, 3, Hammet Street, Taunton.

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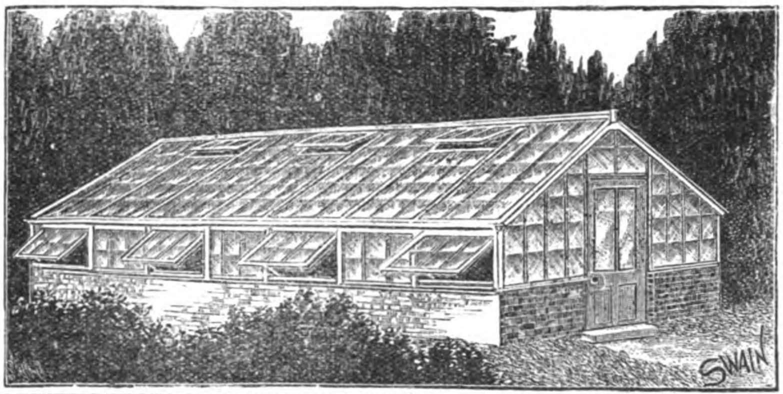

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Ensbury Park,
Bournemouth.

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July, 1924 G.H.S.

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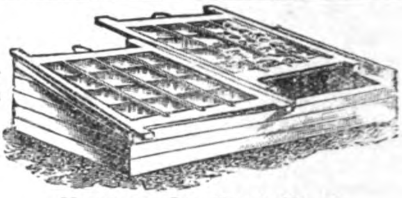

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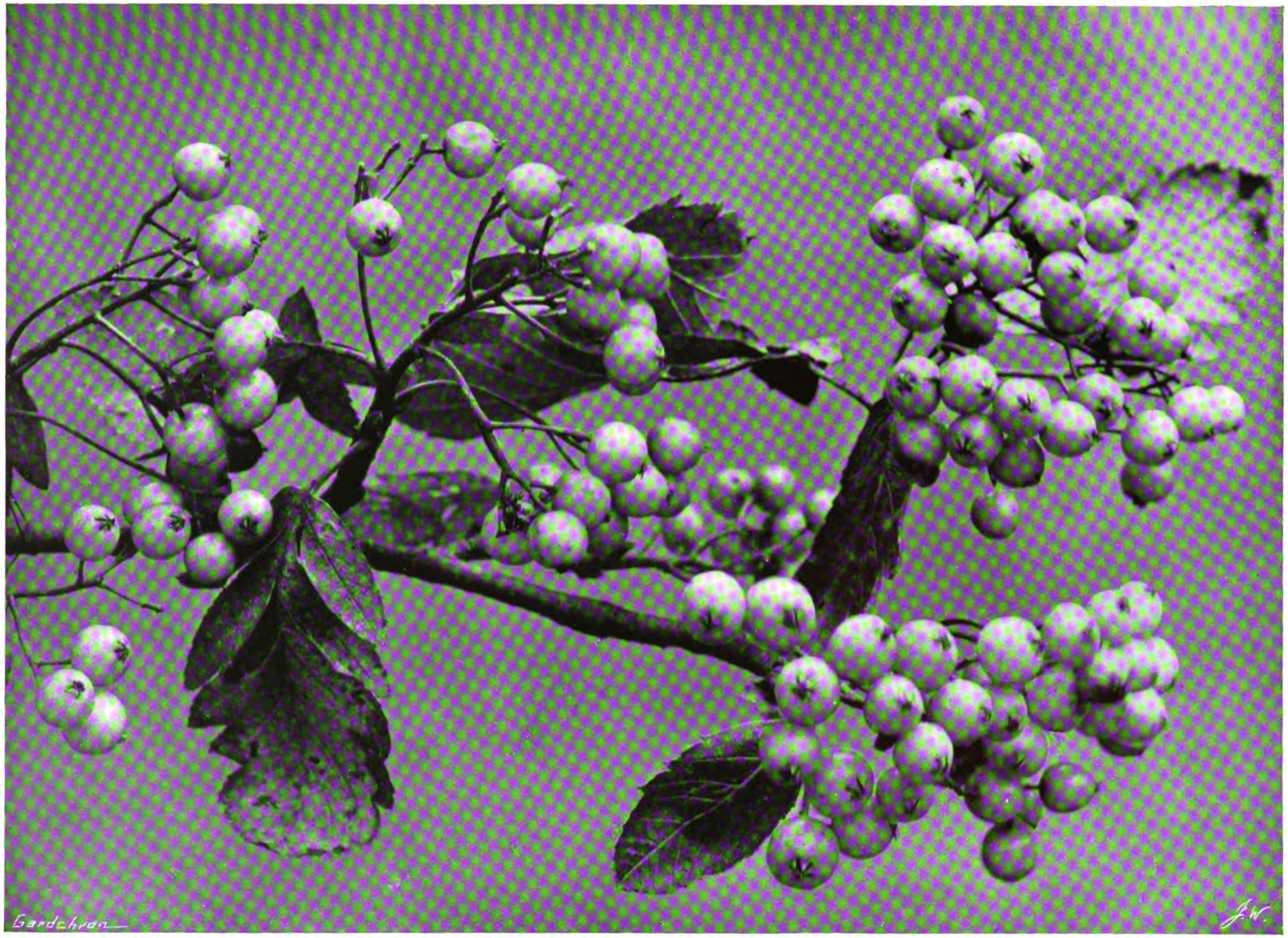
Gardchron
J.W.

PYRUS PINNATIFIDA VAR GIBBSII.

THE
Gardeners' Chronicle

No. 1997.—*SATURDAY, APRIL* 4, 1925.

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SUPPLEMENTARY PLATE.

Pyrus pinnatifida var. Gibbsii.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 46.0°.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London. Wednesday, April 1, 10 a.m. Bar. 30·0, temp. 50°. Weather, .

Form and Colour in the Garden.

IN the course of a recent address to the Garden Club by Sir Frederick W. Keeble on the subject of form and colour in the garden, questions of great horticultural interest were raised. Beside that which constituted the chief part of the address—the tendency in the modern garden to disregard beauty of form of the individual plant and to concentrate on colour schemes—a larger question was raised, namely, whether the time has not arrived when a new style of gardening might be devised and practised! The argument in favour of the suggestion runs as follows:—the number of garden styles which have been invented is almost as limited as the number of architectural styles. And just as modern architecture appears to be unable to evolve a new style and to be content in taking—not always very happily—ideas from the old styles, so is it with garden architecture. We have the formal garden, the wild garden, the rock garden and so on. Each compartment is often beautifully furnished with plants but the garden lacks unity. It might be urged that this is an advantage, and, indeed, it would be were the unity to be monotonous. It might also be urged that it is an affair for the garden architect and that it is his business to give unity by working out a design which embraces all parts of the garden. This may be so, but it is not the point at issue, which is that the garden architect himself—like all of us—adheres to the old, well tried, and it must be admitted, remarkably successful methods. Those methods were introduced and perfected when the choice of garden subjects was far more limited than it is now. During the past century vast numbers of new plants—trees, shrubs and herbs—have been introduced and provide a wealth of form and colour undreamed of in earlier gardening days. Anyone who bears this all-important fact in mind and approaches the subject unprepossessed by convention can scarcely fail to wonder why it is that whereas winter lasts for more than six months of the year, gardens are often planned so as to be beautiful for the summer months only. During the dull grey and wet months when the garden is most needed to solace the country dweller, it is only too often, at all events in large part, bare of all beauty except that of the freshly dug earth. Yet there are shrubs and trees and lesser plants almost innumerable which are beautiful and of varying beauty on every one of the three-hundred-and-sixty-five days of the year. Convention and convenience alike conspire to banish them from the parts of the garden in which the herbaceous perennials—the backbone of the small garden—are lying dormant. Why should this be when, if the shrubs and lesser trees were made free of the garden, with due regard to the amount of growth that each makes and the space available for their accommodation, they would keep it bright and beautiful all the year round. Wilson's and many other Berberis, Senecio Grayii, the grey and green Santolinas, the larger and smaller growing Olearias, the early-flowering and other Brooms, Spartium junceum, Koelreuteria, the sometimes despised but in its place splendid Viburnum rhytidophyllum, the less deciduous Tamarisks, the Cistuses, the Heaths, Pernettyas, Rhododendrons, Pieris, Plagianthus, Rosemary and Lavender in single specimens and in groups—to mention only a few of evergreen shrubs now available—would be no longer confined to shrubberies but distributed throughout the whole garden. Between the larger or smaller groups would be grassy walks, surrounding and passing through the places reserved for perennials and annuals. Hence even when the annuals were gone and herbaceous perennials had died down, the whole garden would still be pleasing by reason of the form and colour of the shrubs and trees admitted freely to all its parts. Needless to say, even though consideration convinced anyone that these methods would all go to the interest and beauty of the garden, it is too great an undertaking for anyone to remodel an existing garden in accordance with them; but we can see no reason why the idea should not be developed and applied to gardens under construction. It would, at all events, result in decompartmentalisation. The garden would no longer be laid out in sections, but as a whole. Formal and wild would find place in it as would, where conditions made them possible, rock and bog garden. Even the conservatories, so often in the old gardens relegated to unvisited remoteness in the vegetable garden, might with architectural conjunction be brought into the garden scheme, and the orchard likewise would become a part of it. What, for example, could be more charming than to be able to approach a low alpine house aglow in late winter with alpines, through a rain-proof avenue of trained Ilex or other evergreen. Needless to say, the suggestion of the integration of the garden would need much careful consideration and cunning planning before it could be adopted but we think that it should not pass the wit of man to give us a new form of garden design which would include all the many qualities of existing gardens with the added feature of unity—the garden not composed of sections but made whole by the intermediation of evergreen and deciduous flowering shrubs, beautiful not only in their several flowering seasons but all through the year.

Picture Postcards of Natural History Subjects.—The British Museum is issuing a series of picture postcards, some in monochrome and others in colour, of natural history subjects. The postcards are issued in series, with an explanatory leaflet, and as they are stated to have been prepared with as much care in point of view of accuracy as if they were destined to illustrate scientific monographs, many of our readers will desire to possess them. From a horticultural standpoint the most useful are those in the series "Remarkable Plant Structures," "Germination of Wheat," "Dispersal of Fruits and Seeds," "British Flowering Plants"—of which there are four sets of five cards each—and "Fossil Plants," the last in a series of ten monochrome cards and leaflet. Country dwellers will also be interested in the postcards of British birds and birds' eggs, British insects, British butterflies, British moths, and breeds of dogs. Single cards of the majority may be obtained at 1d. each, and single coloured cards at 2d. each from the Natural History Museum, Cromwell Road, S.W. The postage on one set of five cards is 1d.; on one set of ten, 1½d.; and on one set of twenty cards, 2½d. A full list of the postcards is given in *Natural History Museum Form* 170*a*.

Legacy to a Gardener.—Mr. Daniel H. Shilson, of Trewhiddle, St. Austell, Cornwall, who died on January 4, aged 85, left £1,000 to his gardener, Mr. William Henry Crocker, whether still in his service or not, and the use for life of Rose Cottage, New Mills, St. Austell, with remainder to his wife for her life if she should survive him.

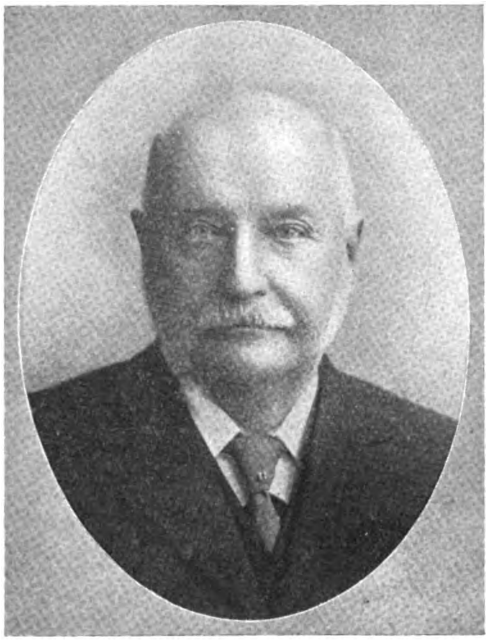
York Gala.—The schedule of the Grand Yorkshire Flower Show and Gala to be held on June 17, 18, and 19, at Knavesmire, York, contains fifty-eight classes. Very liberal prizes are again offered for collections of plants, rock gardens, and water gardens. For a group of miscellaneous plants in or out of bloom, arranged for effect, the sum of £70 is offered in six prizes, the first prize being £20; the prizes in the other classes in this section are the same as last year. The Orchid classes number eight, with prizes of sufficient value to attract the best growers. The Rose classes are extended, there being new classes for (a) six Roses in pots; and (b) twelve single blooms, both open to amateurs only. The classes for Carnations, Gloxinias, Begonias, and Calceolarias are as in former years, with similar prize money, amounting in the aggregate to £76 5s. The hardy flower section is again a strong feature of the schedule. Fruit should be better represented at the York Show this year than for some time past as we are glad to note there are no fewer than six classes, viz., for a table decorated with fruits and flowers, for a collection of four kinds of fruits, for two bunches of Black Hamburgh Grapes, for two bunches of white Grapes, for six Peaches, and for six Nectarines respectively. Special prizes are again offered by nursery firms for vegetables. We appeal strongly to our readers to support this important flower show either by exhibiting or visiting it, and we congratulate the Committee on its courage to continue the show in the face of not a few difficulties and disappointments.

Gunnersbury Park. — Gardeners will be greatly interested in the proposal to acquire this well-known West London estate, with its famous gardens, as a public park. The whole of the estate comprises some two hundred acres and the residence has for many generations been the home of members of the Rothschild family, who, as most of our readers are aware, have been keen patrons of gardens, and fortunate in having in their service such capable craftsmen as Mr. James Hudson, V.M.H., Mr. Geo. Reynolds, and, in recent years, Mr. Arthur Bedford. The estate is situated in the town of Brentford, but the proposition to acquire the estate comes from the neighbouring towns of Ealing and Acton. The land is ripe for development as a building site, and consequently the purchase price is very high and said to be nearly a quarter of a million pounds. Efforts have been made to secure the consent of the Middlesex County Council to contribute twenty-five per cent of the purchase price and to obtain the sanction of the Ministry of Health to raise a loan to carry the matter through. The estate includes two mansions, two lodges, farm buildings, a detached building containing a swimming bath, glasshouses, stabling, etc., and it is proposed to devote some of the buildings to municipal uses. Both the Ealing Town Council and the Acton Town Council are anxious that the estate should be acquired, but Brentford and Chiswick are not, as they have both spent large sums of money on open spaces quite recently. Probably some of the frontages would be sold to help defray the cost of the purchase, but there may be opposition to the scheme by those who maintain that the whole of the land is greatly needed for building purposes and that there are abundant open spaces in the district, including Kew Gardens just across the river.

Windolite.—Some particulars of this glass substitute are given in *Nature* for March 28. The writer states that it transmits ultra-violet rays in a much greater degree than ordinary window glass. It is claimed that plants grown in structures in which Windolite is used instead of glass do not become so drawn as under ordinary glass and that this is not due to greater coolness of the frame or house. Reference is also made to "Vita-glass" which allows much of the ultra-violet rays to pass through and costs about 3/- per square foot. The writer also suggests that if fruits and salads are found to be improved in quality by ultra-violet rays, this glass should be useful for greenhouses.

Importation of Plants into Canada.—The Canadian Government has asked the Ministry of Agriculture and Fisheries to inform nurserymen and others concerned in this country, that considerable inconvenience is being caused to the Dominion authorities by reason of the fact that many parcels of plants, &c., sent through the post to Canada bear a label showing the ultimate address of the consignee, in addition to the official mailing label forwarded by the importer. The Canadian Government specially ask that no label other than the official mailing label may be affixed to the outside of the package; an additional label bearing the address of the importer should, however, be placed *inside* the package. Hay, straw or fodder should not be used as packing material, and the box should be marked "No hay, straw or fodder used as packing."

Mr. J. T. White.—Those who lay the foundation of a great industry deserve, but do not always reap, the full reward of their pioneer efforts. Fortunately, Mr. J. T. White, one of the pioneers of the bulb industry in Lincolnshire, has achieved success, and now after forty years of hard work and steady enterprise he is retiring to enjoy the evening of life free from all business cares. About forty years ago Mr. J. T. White commenced business as a bulb collector and dealer and founded the now widely known firm of Messrs. J. T. White and Sons, Daffodil Nurseries, Spalding. In the earlier years of his business career he foresaw the commercial possibilities of bulb growing, both for the sale of bulbs and the sale of cut flowers, but when he paid so much as thirty-five shillings for one Daffodil bulb some of the neighbouring farmers had doubts as to his sanity; nevertheless they lived to admire his foresight and also to take part in the industry he helped to create, for, as our readers are aware, Spalding has become the centre of an extensive industry in the bulbs and flowers of Daffodils and Tulips, and in these two subjects Spalding can now more than hold its own with Holland. Mr. J. T. White is seventy-seven years of age and so active and healthy that there does not appear to be any good reason why he should retire, but he thinks others should shoulder the burden of responsibility he has borne for so long a period and so he is relinquishing his interests in the firm he founded and the business is to be carried on under the old title by his son, Mr. Alfred W. White, who has been his chief assistant for about thirty years. Moreover, Mr. A. W. White's son, Mr. Willis M. White, has just attained his majority and will join his father who, by the way, is one of the foremost authorities on pig breeding, as well as one of the largest growers of Daffodils and Tulips on commercial lines. A portrait and appreciation of Mr. A. W. White appeared in our issue of March 19, 1921, p. 134, on the occasion of his election to the presidency of the British Florists' Federation.



MR. J. T. WHITE.

Fruit-growing in Texas.—In the "Texas Supplement," published by *The Times* on Tuesday last, some interesting facts concerning the production of fruits and vegetables in Texas are given in an article entitled "Agriculture." The principal orchard fruits grown are Apples, Peaches, Pears, and Plums. The Apples are principally grown in the more elevated sections of the State, while Peaches are produced in central, north, and east Texas, and they constitute one of the most important orchard fruits grown. Citrus fruits are grown successfully in the lower Rio Grande Valley in the Hidalgo and Cameron counties. Both Oranges and Grape Fruits of splendid quality are produced and the demand greatly exceeds the supply. Texas produces three-quarters of the Pecan Nuts grown in the United States. The Sweet Potato is the most important commercial vegetable crop. Ordinary Potatos are also cultivated extensively, as are Cabbages, Onions, and Tomatos. Water Melons of good quality are grown in large quantities in many parts of this large State, which is the most southernly situated of all the United States; the area of Texas is estimated at 167,934,720 acres. Large areas are devoted to the cultivation of Maize, Wheat, Oats, Rice, Sugar Cane, Tobacco, and Cotton, which is the most important crop grown.

Kurume Azaleas.—It is interesting to learn in a letter by Mr. E. H. Wilson, published in *Horticulture*, U.S.A., that one of the Kurume Azaleas was introduced into England from Hongkong so long ago as 1846. It was named Azalea ramentacea and for more than sixty years it has been in cultivation in the collection at Holm Lea, U.S.A., having been obtained in the first instance by Prof. C. S. Sargent's father. According to Mr. Wilson it was apparently lost to European gardens a couple of decades after its introduction.

Pollution of the Atmosphere by Smoke.—Interesting data were given by Dr. J. S. Owens on the pollution of the atmosphere by smoke in a paper read before the members of the Royal Society of Arts at a recent meeting. He stated that soot may remain in the air for a long time and if produced from a chimney one hundred feet high a particle of soot would take nearly three weeks to reach the ground in perfectly still air. From this it is evident that soot will drift for great distances before it settles and thus we find that the country for a large area around towns becomes affected by the smoke. Besides carbonaceous or sooty matter tarry matter is also evolved with the smoke. The corrosive quality of the deposit, however, is mainly due to sulphur which, as gardeners are well aware, is a substance most injurious to plant life and it is also the corrosive agent which attacks buildings, rotting the stone and corroding the metal work. As showing the injurious effects of fog not only on vegetation but also on the public health, Dr. Owens stated that something like fifty per cent. of the sunshine which London ought to receive is cut off by this smoke-fog, and in this connection a large proportion of the ultra-violet radiation from the sun is also cut off. During times of smoke-fogs over the city the amount of sulphur in the air rises rapidly until it exceeds four or five times the quantity found in ordinary fine weather. It is unfortunate for Kew Gardens that they are situated in the south-west of London, for this is the general direction of the wind on occasions when fog prevails, so that Kew gets the full benefit of "a London particular," and the effect is worse owing to fogs raising the temperature. On a certain day at five p.m. there was an area varying from 46° F. to 48° F. over the city, while the temperature at Kew was only 32° F. and it is only reasonable to conclude that the effect would be for the fog to descend rapidly in the cooler atmosphere. It is estimated that during thick smoke haze in London, assuming an upper limit of three hundred feet to four hundred feet, there would be something like 200 tons to 250 tons of soot suspended over London and this amount of soot may be produced in about three hours by the fires lighted on a winter's morning in London.

The New Scottish Seed-Testing Station.—Intimation is made by the Board of Agriculture for Scotland that their new seed-testing station at East Craigs, Corstorphine, will be opened for the receipt of samples for testing on May 11. All seed merchants and growers are informed that in view of the transference of the apparatus, etc., to the new premises, it will not be possible after April 18 to accept any samples for testing at the present station. No samples for test should, therefore, be forwarded to the Board between the dates mentioned.

Honour for a Dutch Secretary.—Our readers will be glad to learn that Mr. H. J. Voors, the Secretary of the General Bulb-Growers' Society of Haarlem, has been created a Chevalier of the Order of Orange-Nassau. This order is well deserved, as Mr. Voors has, in addition to his past labours for Dutch horticulture, done much of the work necessary in the organisation of the International Exhibition now being held at Heemstede, and all horticulturists, English as well as continental, will unite in congratulating him.

Appointments for the Ensuing Week.—Sunday, April 5: Wakefield and North of England Tulip Society's meeting. Monday, April 6: United Horticultural Benefit and Provident Society's meeting. Tuesday, April 7: Royal Horticultural Society's Committees meet (2 days); Royal Caledonian Horticultural Society's meeting; Royal Horticultural Society of Ireland's spring show (2 days); Croydon Gardeners' Mutual Improvement Society's meeting. Wednesday, April 8: Wimbledon and District Gardeners' Mutual Improvement Society's meeting; Sheffield Chrysanthemum Society's meeting; Bath Gardeners' Society's meeting. Saturday, April 11: Newcastle and District Horticultural Mutual Improvement Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Berberis Bealei.*—On the following day another relation of Wang's came to me in a secret manner, and informed me that he knew where the same species was to be procured, and that he was willing to go and fetch some of it for me. I engaged his services at once, merely stipulating for young plants with good roots, as others would have been quite useless to me. These he promised to bring, and he kept his word. In the course of the day he returned with several good plants, which he sold to me, and which I afterwards succeeded in getting down in good order to Shanghae, to Mr. Beale's garden. Sir Wm. Hooker informs me that this may be the plant which Thunberg calls Ilex japonica, and which is only known by a figure and description. I have not seen the figure, but the description is now before me, and does not agree with my plant in several important matters. I have therefore named this species Berberis Bealei, and thus describe it: An evergreen shrub, eight feet to ten feet high. Leaves twelve inches to eighteen inches long, pinnate (four pairs and an odd one), leaflets large, oblique and cordate at the base, odd one ovate and cordate, pointed and spiny, smooth, of a shining green, and very like the English Holly. Flowers in terminal spikes, spikes about twelve in number, each six inches to nine inches long, yellow. Fruit of a glaucous blue. Flowers in winter, December to March. From the district of Hwuy-chow, China. Chinese name Shae-ta-kong-la. *R. Fortune.* [There is no doubt about this being Berberis japonica. The *learned* Professor Thunberg did not know the difference between a Holly and a Berberry.] *Gard. Chron., April* 6, 1850.

Publication Received.—*Mycetozoa.*—By Arthur Lister, British Museum (Natural History), Cromwell Road, London, S.W. 7. Price £1 11s. 6d.

BULB GARDEN.

DIERAMA PULCHERRIMA.

Long known in gardens as Sparaxis pulcherrima, a name now superseded by that given above, this is, as Sir Herbert Maxwell remarks in *Flowers: A Garden Note Book,* "the loveliest plant in our August borders." Its pink, crimson, or white bells hang gracefully from their slender pedicels, borne on arching stems of the greatest elegance, and sway even in the gentlest breezes which waft through the garden. It is not often seen in the numbers which make it most impressive. A plant or two, or even a small group, fails to produce anything like the same effect as large numbers in suitable places. I first saw it at its finest on a memorable first visit to the gardens of Messrs. Walpole at Mount Usher, Co. Wicklow. The Dierama was then in flower and groups waving gracefully over little ponds and over the stream sides presented an indelible picture of the highest charm. This Dierama is easily raised from seeds, sown either under glass or in the open, and this, by the way, is the best method to establish D. pulcherrima in the garden. Old plants do not establish well and the seedlings should be placed in their permanent positions when they are not more than two or, at the most, three years' old and left alone. I once came across a flourishing colony of this lovely plant in a Dumfriesshire garden, where it had been sown in the open and the seedlings merely thinned.

Dierama pulcherrima likes a moist soil and is seen to best advantage by the side of a pond or stream. There, rising to four, five, or six feet high, it is delightful in the highest sense of the term. As stated above, it varies in colour,—white, pink, and crimson of varying shades. I do not like the white forms so well as the others, but some prefer them. Some three or four years ago the Donard Nursery Co. exhibited a very fine white form before the Floral Committee of the R.H.S.

D. pulcherrima is a South African plant, and, in consequence, some doubt is entertained regarding its hardiness in Great Britain. It may possibly be too tender for some localities, but all the instances of loss which have come under my notice have been probably due to an attempt to establish old plants.

No one who tries and succeeds with D. pulcherrima will ever regret the acquisition of this supremely beautiful plant. *S. Arnott.*

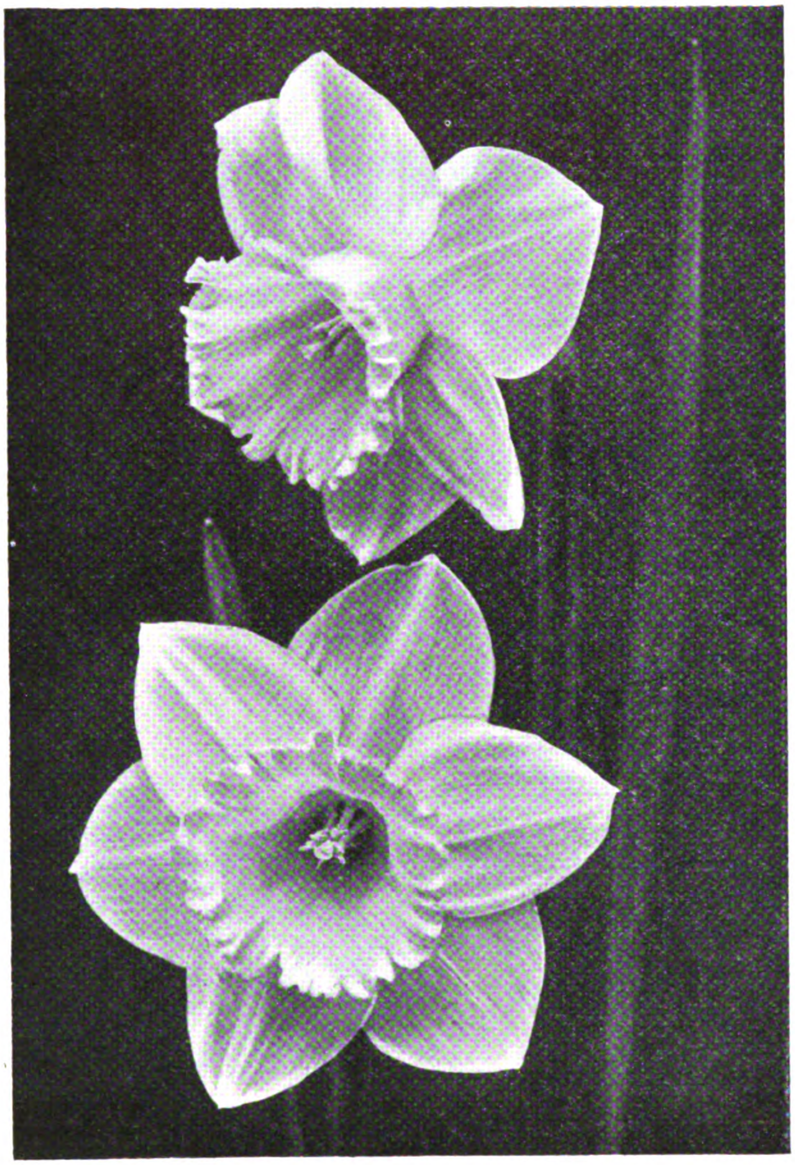


FIG. 94.—NARCISSUS DOMINICK.

R.H.S. Award of Merit, March 24 (see p. 227).

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Calanthes.—These beautiful Orchids are largely grown in establishments where a general collection of stove and greenhouse plants is cultivated, as they supply cut blooms over a long period. The flowering season begins in November with the C. vestita section, followed somewhat later by C. Veitchii and the many darker forms, C. Wm. Murray, C. Regina, and the white C. Harrisii, which will produce a display until March. Signs of new growth are apparent in the plants of the earlier-blooming section, which have been resting for the past few weeks. When the young shoots are about an inch long and new roots appear at their bases the plants may be repotted. If not already done, remove the pseudo-bulbs carefully from their pots and shake away all the old soil. Cut off all decayed roots to within one inch of their bases; the small tuft remaining will help to hold the plant in position in the pot. Examine each pseudo-bulb for the presence of scale insects, and if observed, remove the insects by means of a small, stiff brush, taking care not to damage the buds in doing so. Ordinary flower pots or rather deep pans are the most suitable receptacles, and they should be one-third filled with drainage material. Some growers prefer to place the pseudo-bulbs singly in pots of various sizes, a method that has its advantages. A good-sized pseudo-bulb will require a pot six inches in diameter, and so on in proportion to the size of the plant. Where growing space is limited, or specimens are needed for placing in the dwelling house, a pot seven inches to eight inches in diameter will prove suitable for five or six pseudo-bulbs of average size.

Repotting Calanthes.—Calanthes are strong rooting plants enjoying a richer and more retentive compost than most Orchids, and three-parts of its bulk should consist of good fibrous loam, the small particles shaken out, with the remainder made up of partly decayed Oak-leaves, chopped Sphagnum-moss, a sprinkling of coarse silver sand, crushed crocks, and a small quantity of bone-meal, the whole well incorporated together. In repotting the plants the soil should be pressed moderately firmly. Leave sufficient space at the top for watering. The base of the new growth should rest upon the compost, for if buried deeply it will be liable to damp off.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Herbaceous Phloxes.—The wealth of beauty and variety to be found in modern herbaceous Phloxes make them desirable border plants, and for autumn display they may be regarded as amongst the most useful plants we have. Young stock from autumn-struck cuttings may now be planted where the plants are required to flower. These Phloxes need generous treatment, and in light, sandy soils it is impossible to get good results without a liberal addition of good organic manure to assist in the retention of moisture.

Violas.—Violas struck from cuttings in the autumn, and which have been well hardened, may now be planted out. Provided weather conditions are favourable, there is a decided advantage in planting early, as the plants have time to become thoroughly established before the trying conditions of summer set in.

Pampas Grass.—Large clumps of this decorative Grass need an annual cleaning and this should be done at the present time. Any divisions or further plantings should also be done now.

Kniphofias.—The present is a suitable time to attend to these plants, and any dividing or replanting may now be carried out. Spring planting is always desirable, but this should not be left too late or the plants will not have time to become re-established before the summer. Care should be exercised in replanting operations, as the fleshy roots are very easily damaged.

Cannas.—These highly decorative plants are valuable alike for their handsome foliage and brilliant flowers, and a well grown bed of Cannas is a striking feature during the late summer and autumn. Plants which have been stored and rested during the winter should now be divided, the portions placed into suitable sized pots and grown on in gentle heat and atmospheric moisture.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Bouvardias.—Although these plants may be successfully grown on a second year after cutting them hard back, following a period of rest, the best results are obtained from young plants raised from cuttings each year. Cuttings may be procured from these same cut-back plants which have been placed in heat and kept syringed. Tips of the young growths about two inches in length may be dibbled fairly thickly into small pots which have been well drained and filled with a mixture of peat, leaf-mould, loam, and plenty of sand. Water the cuttings and plunge the pots in the bed of a propagating case having a bottom heat of about 70°. If kept close, shaded and moist, the cuttings should be rooted in about three weeks. They should then be gradually accustomed to the air of the house and finally removed from the propagating case to a position near the roof-glass in the same house or to one of an equal temperature. When sufficiently hardened the young plants should be placed singly into thumb pots, growing them on in a temperature of 60° to 70° during the early stages. A week or ten days after the transference of the plants to the thumb pots they should be pinched back to the first joint, and in due course all the subsequent growths should be regularly pinched throughout the growing season up to the end of July or the end of August at the latest. Their second shift should be into three-inch pots and after this stage they should be grown in a somewhat cooler atmosphere. For the final potting five-and-a-half-inch receptacles will be large enough. Very little, if any, peat need be used at this potting, provided, good, fibrous, light, sandy loam is procurable. This latter material and good flaky Oak leaf-mould used in equal parts with plenty of sand and some finely broken charcoal added, will form a good rooting medium. When the plants are established in their pots they require to be supplied with plenty of water at the roots. Otherwise, they are likely to suffer seriously from the attacks of red spider. Bouvardias are also liable to attack by green fly which should be kept in check by fumigating the house with a nicotine compound. Though a low span-roofed house, provided with hot-water pipes, offers the best accommodation for Bouvardias at all seasons, the plants may be grown in a cool frame or pit during the warmest summer months, syringing them and closing the frame during the afternoons or early evening, according as the days are bright and warm or otherwise. By the middle of September, however, it will be well to move the plants into a light house, having a minimum temperature of 55°. To ensure the free-flowering of the plants, they should, when established in their flowering pots, be fed with soot-water, weak liquid manure, and by occasionally giving them a light top-dressing of a good artificial plant food.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Apples and Pears.—Keep the collection of pot Apple and Pear trees in the open so long as possible. If they are still plunged in ashes to protect the pots examine the soil frequently for water, especially when north and east winds prevail, such as we have experienced during the last few weeks.

Tomatos.—Grow the first batch of Tomatos quickly, and if in seven-inch pots stop the leading shoots at the third or fourth flower truss. Remove all side shoots so soon as they can be seen. Should the plants grow too strongly and the growth be soft, check this by feeding the roots lightly with sulphate of potash. Ventilate the house carefully so soon as the temperature reaches 65°. If any difficulty is found in the fruits setting, gently dew the flowers with a very fine spray of tepid water about midday. Keep the house rather drier than for most subjects. Make another sowing and raise the plants in heat for successional cropping. Fumigate the house with nicotine to destroy white fly.

Melons.—So soon as these plants are well rooted in 5-inch and 6-inch pots they are ready for planting out. Place a row of slates on the bed to prevent the roots growing into the hot-bed. The soil should be placed on a double row of good turves and should consist of three parts loam and one of mortar rubble, placing it in mounds one foot apart. Allow it to become thoroughly warmed through before the Melons are planted.

Strawberries.—The earliest Strawberries are beginning to show colour and watering should be done very carefully, just sufficient moisture being given to keep the roots moist. At this stage the use of stimulants should be discontinued. Grow the plants on a shelf in the cool orchard house in full sun and give them all the air possible, leaving the ventilators open a little during mild nights. This will greatly assist the berries to develop a fine flavour and recompense the grower for any extra care bestowed on the cultivation of the plants. Keep all successional batches of plants clean and thinned as advised for the earliest crops. See that the leaves are quite clear of the vine foliage at all periods; unless this is done there is a danger of red spider infesting the foliage.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Prospects of the Fruit Crops.—Apple trees are full of fruit buds, and look very promising for a bountiful crop. Many standard trees that fruited heavily last year have sufficient fruit buds for a good crop this year, and the same is true of bush Apples. Many of the horizontally-trained cordon trees have far too many flower buds showing, although the buds are looking healthy at present. The crop will depend on the weather at flowering time; buds are a fortnight too early, but the cold weather from March 11 onwards has checked them a little. Fruit buds, with the exception of a few cases, are very scarce on Pear trees in these gardens. This, I gather, is general everywhere. If the summer is favourable the trees will benefit by not having a crop; the wet summer last year did not suit Pears, especially on heavy soils, and many trees look very unhealthy. A warm summer would put fresh vigour into the trees for a crop the following year.

Plums.—Standard Plum trees have abundant flower buds, and trees that bore heavy crops last year are quite equal to those that had none. Bush Plum trees and trees on walls are all showing plenty of flower buds, and are looking healthy.

Cherries. — Sweet Cherries are showing plenty of flower buds, and the trees are looking promising. Morello Cherries are just up to standard so far as flower buds are concerned, and if we are favoured with a genial spring the prospects should be very good. It is a little early to speak of the small bush fruits, but there is every appearance for plenty of blossom.

Strawberries.—Strawberry beds should be carefully looked over for the red leaf, and where this is detected, the affected plants should be destroyed at once, and young, healthy plants put in their places. Plants that are attacked with red leaf are very weak, the leaves small, and of a sickly-looking colour.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Celery.—Early Celery plants will now be ready for pricking off into boxes or frames. Keep the seedlings in a close atmosphere for a few days until they are thoroughly established, then grow them in a light position where they will not become drawn.

Hoeing.—There is no more important operation in the kitchen garden than hoeing. So soon as seeds spring up use the hoe and keep it going, also use this tool frequently amongst any crops that have withstood the winter, and between rows of Peas, Beans, etc., that are now growing freely with the advent of more sunshine. Frequent use of the hoe between growing crops will often save a lot of watering in dry weather.

Brassicas.—Examine closely seedling Brassicas raised from seeds sown a month or so ago, and if there is a shortage of any kind through damage by birds, slugs, fly or any other cause make another sowing of those that are deficient. Seeds of late Savoys and varieties of Kales may also be sown now. It is always advisable to make two sowings of Brassicas, the one in March and the other in April, as plants from these later sowings will be found useful for filling ground that has been cleared of early Peas and Potatos.

Celery Trenches.—Have all Celery trenches made as opportunity and the weather permits, and also those for Leeks, if they are grown in this manner. Trenches should always be prepared some time before planting, as the soil then becomes settled and is in good condition for the reception of the plants.

Seed-Sowing.—Make successional sowings of Spinach, Lettuces, Radishes, Mustard and Cress, Turnips, Peas, and Broad Beans to maintain a regular supply of these vegetables throughout the season.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardner to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Roses.—There is no fixed date for the pruning of Roses, which depends on the season and district. All Hybrid-Perpetuals, Tea and Hybrid-Tea Roses in these gardens have as yet shown little or no sap movement. The second week in April is early enough for pruning these types of Roses in inland gardens and gardens at a high altitude. The methods of pruning have already been ably dealt with in these columns; when pruning the bushes in a freshly planted bed, it is advisable to cut the shoots hard in order to build up a good foundation to the tree for next year. Any beds that may require nourishment may be enriched with well-decayed manure, bone-meal, or a special Rose manure when forking between the plants after pruning them.

Violas and Pentstemons. — Autumn-rooted plants of both Violas and Pentstemons may now be placed in their permanent quarters. All faded flowers should be removed from Violas, for if this is neglected seed pods will form and the plants become exhausted to the detriment of flowering.

Turnips.—A few rows of early Turnips may be sown. Protect the seeds of this and similar crops from small birds.

Autumn-sown Cabbage and Cauliflowers.—Plants from this sowing may now be lifted from the seed-bed and put in rows in the garden. The Cauliflower plants will need slight protection. Sowings of Cabbage and of Early London and Walcheren Cauliflowers may now be made on a dry, warm border out-of-doors.

Early Potatos.—A few short rows may be planted with early Potatos on a warm border. I would not advocate the planting of many tubers for the present in districts where late frosts prevail.

Broad Beans.—A main crop sowing of Broad Beans may now be made. Put the seeds in double rows about nine inches apart and space the seeds in the lines from six inches to seven inches apart.

Beet.—A sowing of early Beet may now be made on a south border. Egyptian Turnip-rooted is an excellent variety for present sowing.

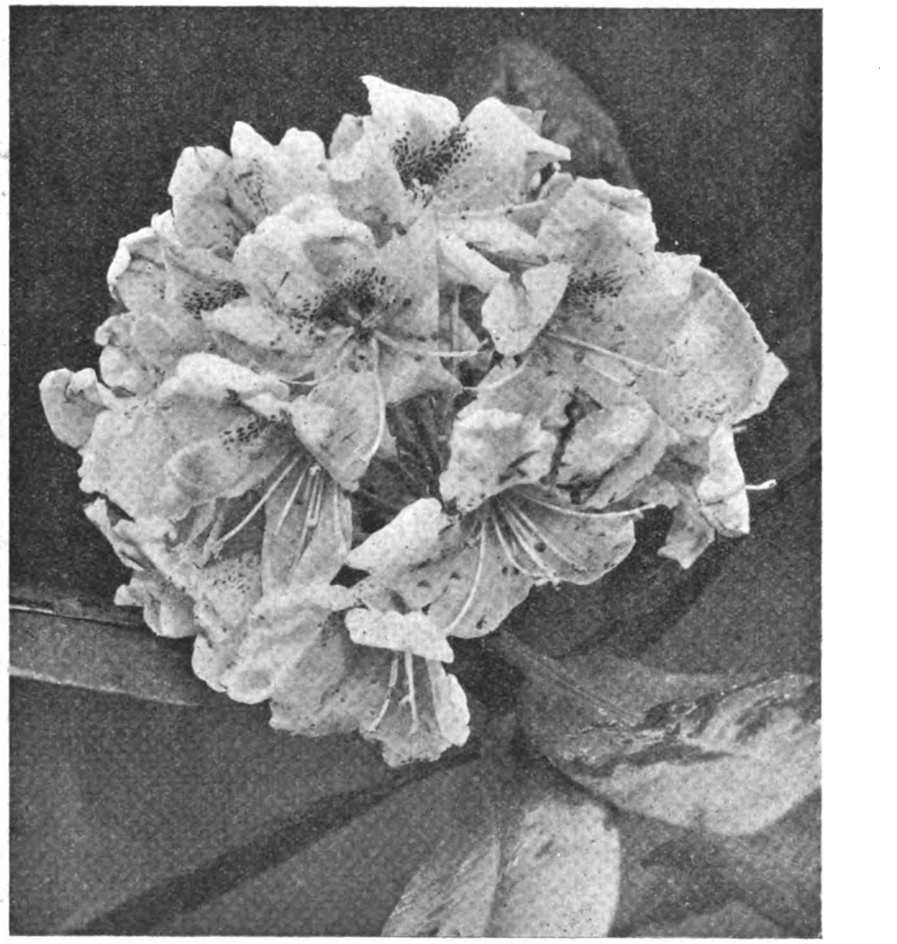


FIG. 95.—RHODODENDRON BRACHYCARPUM.

TREES AND SHRUBS.

RHODODENDRON BRACHYCARPUM.

Though not among the most showy of the evergreen species of Rhododendron, R. brachycarpum is of considerable interest to cultivators who specialise in the family. The subject of this note, and R. Metternichii, which covers large areas near Lake Yumoto in the Nikko Mountains, are the only two representative of the Rhododendrons growing wild in Japan. A native of Northern and Central Japan, where it is found wild over a wide area in the mountain regions, R. brachycarpum proves to be a hardy shrub in British gardens. It seems strange that a plant described as growing in abundance above the forest line in Fujiyama should have only found its way into our gardens for the first time in 1888.

Growing up to ten feet in height, R. brachycarpum is of sturdy, bushy habit, in open positions increasing as much or more in diameter in proportion to the height. The narrowly-oblong leaves are four inches to six inches long, and one-and-a-half to two-and-a-half inches wide, the upper surface smooth, and the under side more or less felted on different specimens. The individual flowers on different plants vary considerably in size and markings. Borne in closely-arranged trusses, four inches to six inches across (Fig. 95), the flowers may be described as broadly campanulate, one-and-a-half inches to two inches wide, five-lobed, creamy-white, flushed with pink in some forms, others pinkish-white tinged with yellow, and the three upper lobes more or less spotted with brownish-yellow. The variation in the seedling plants can no doubt be traced to the collection of seeds in different localities.

Being very hardy and a June-flowering species, it was thought to provide possibilities as a parent to prolong the season of flowering. Numerous hybrids have been raised from it, and we have some dried flowers at Kew labelled "Waterer 1907," but as yet I have seen none of outstanding merit. If, however, one or two of the best forms were used in conjunction with selected plants of R. discolor and R. auriculatum, or with one or two of the best late-flowering hybrids something good should result.

PYRUS PINNATIFIDA VAR. GIBBSII.

(See Supplementary Plate.)

Many readers who are particularly interested in hardy trees and shrubs will still retain vivid recollection of the large and comprehensive display of sprays of autumn fruits exhibited by the Hon. Vicary Gibbs at one of the Royal Horticultural Society's fortnightly shows last September. The most interesting item in that exhibit to some of us was a form of Pyrus pinnatifida labelled Pyrus firma. The origin of this name is shrouded in mystery, and being obviously without meaning and unsuitable, a name indicating something of the tree's relationship and history seemed desirable, and so with the owner's permission the name of P. pinnatifida var. Gibbsii is now adopted.

Pyrus pinnatifida, the Bastard Service tree, is reputed to be a natural hybrid between P. intermedia and P. aucuparia. It is found wild in Northern and Central Europe, and also in the Isle of Arran. Trees raised from seeds may be expected to come true, but intermediate forms occur from time to time, showing their connection with the two parents. This is said to be the origin of Pyrus Meinichii, trees of which the late Earl of Ducie obtained from Norway about 1904. The subject of the supplementary illustration is probably of similar origin, showing perhaps rather more evidence of P. Aucuparia as one of the parents, Attractive in flower and foliage the tree is particularly ornamental in autumn when laden with the round-oval fruits, which are rich red in colour. *A. Osborn, Kew.*

MAGNOLIA GRANDIFLORA.

This illustration of Magnolia grandiflora (Fig. 96) depicts a bud and three flowers in their stages of development in opening. It will be noticed that the lower petal of the bud is unfurling in a downward direction, while the flower immediately under the bud, on the right of the illustration, is further advanced, but the lower petals are more forward than the upper ones. The lower flower on the left is further advanced, and in another twelve hours the upper petals would be as fully expanded as those in the top flower. This development takes place in all the flowers where the plant is trained in an upright position. Two shoots are seen springing from close to the base of the top flower; these are the new growths forming new buds for flowering next season, and such growths are always formed through the winter and spring, so should these shoots be removed, others following would be too late to ensure free flowering. We tie all shoots to the trellis which supports the plants, and we find this method very successful at Coombe House, Croydon, where there are two specimens that cover the main entrance. They are thirty feet high and twenty-six feet wide, and I have seen them carry over thirty expanded flowers at one time, with numerous buds; the scent from so many flowers is very powerful. The stem of our specimen on the left-hand side of the entrance is twenty-two inches in circumference, twelve inches from the ground, while the other has a girth of twenty inches at twelve inches from the ground. *Mark Mills.*

THE ALMOND AS A TOWN TREE.

This beautiful flowering tree is not so commonly planted in towns as its many qualities deserve. It grows extremely well in and around London, and is a charming and attractive subject for any garden fortunate enough to possess a good specimen. Having regard to its early-flowering—usually during February and March—it becomes a welcome sign of spring, after the long spell of winter's desolation.

It is an invaluable tree for planting in small, open spaces in congested areas, and would be very effective for street-work, although, I fear, its chances of success as such in London would be jeopardised by the depredations of boys and even of some adults who have an eye to the commercial value of the flowering twigs. Walking through one of the narrow, drab streets of South London a few days ago I noticed in two small gardens—some few houses apart—a young Almond tree planted in the centre of each; both were thriving and appeared to be about ten years old. The stems were begrimed with soot, but the wealth of rosy blossoms was as fresh, clean, and as pure as if the flowers were opening in the purest of country air! Mean streets would be redeemed from drabness if such plantings were more extensive, and by the aid of the local authority the people could be taught to love and appreciate the beauty of such an easily-grown subject. *H. G. King.*

RHODODENDRON BARBATUM AT TILGATE, CRAWLEY.

A very fine specimen of Rhododendron barbatum has flowered in the pleasure grounds of these gardens. The tree is twelve feet high and the same in diameter. On March 6, three hundred trusses were in flower at one time and there were one hundred and thirty more trusses to expand. The sudden change of weather to cold winds and sharp frosts, however, spoiled the beauty of the plant and also ruined the unopened flower trusses. *E. Neal, Tilgate Gardens, Crawley, Sussex.*

MAGNOLIAS.

Among trees and shrubs with showy flowers several of the Magnolias are noteworthy and it is remarkable that they are not more frequently met with in gardens. Apart from the fact that they are difficult subjects to transplant their culture generally presents no difficulty, as they thrive in almost any well-drained soil and are quite hardy.

It is wise, however, to plant Magnolias in positions protected from east winds, as they flower early and are apt to be injured by keen winds and late frosts.

M. conspicua, a Chinese species, is one of the oldest and best known. It forms a freely branched tree twenty feet to twenty-five feet in height, and produces a profusion of large, pure-white, sweetly scented flowers in early spring.

M. Soulangeana, a hybrid between M. conspicua and M. purpurea, resembles the first-named parent in habit. Its large, fragrant flowers are soft pink within and shaded rosy-purple without.

M. Lennei is another hybrid from M. conspicua and resembles it in habit and freedom of flowering. Its flowers are of a bright, rosy-pink colour and present a pleasing contrast to those of M. conspicua.

M. Campbellii is a beautiful Himalayan species, but not so free-flowering as the aforementioned and requires a sheltered position.

M. stellata is one of the dwarfest of all Magnolias and very free-flowering, even quite small plants being literally covered with the sweetly scented, star-like flowers in April and May. In addition to its usefulness in the outdoor garden, this species is well adapted for pot culture and is an acquisition for conservatory decoration in the early months of the year.

M. parviflora is another dwarf, Japanese species of free-flowering qualities, its crimson stamens making the flowers very attractive.

M. glauca is a rather slow-growing shrub and its cream-white flowers do not appear until June. The undersides of the leaves are silvery-white, and a pretty effect is created when the foliage is disturbed by the wind.

M. tripetala is a free-growing species and requires plenty of room to show its character. It has very large deep-green leaves, and white, sweetly scented flowers that are produced in June.

M. grandiflora is a handsome, evergreen species with large, glossy leaves and bears flowers of a large size. Although occasionally grown as an untrained tree, it is seen to best advantage when trained to the walls of a building, and some very fine examples exist in various parts of the country. There are several varieties, differing from the type in the shape of the leaves, of which the Exmouth variety appears to be the most floriferous. *W. Auton.*

ALPINE GARDEN.

ANDROSACES FOR SUBURBAN GARDENS.

Mr. Mark Mill's note on Androsace Chumbyi (page 200) is timely, because there is a great prejudice against all Androsaces as plants for town gardens. One could not recommend this genus of plants to those gardening in the acid-laden air of the environs of some northern industrial towns, but their cultivation is quite feasible near London. The late Mr. R. A. Malby, who was very successful with rare alpines at Woodford, had flourishing plants of the even choicer (Aretia) Androsaces, although he was never altogether successful with the showy Aubrietias, which are the main stand-by of so many rock and wall gardens! His Aubrietia plants survived, and that is about all one could say of them.

Androsace Chumbyi is (or was) supposed to be a hybrid between A. sarmentosa and A. villosa, but to me it has always appeared no more than a local form of A. sarmentosa, and the same may be said of the very beautiful plant with, apparently, no authentic name, but which masquerades in nurseries as A. primuloides. A. Watkinsii is yet another of the set.

A. Chumbyi differs from what is regarded as the typical A. sarmentosa in its smaller rosettes and, at any rate, relatively larger flowers; a brightly coloured form is sold as var. Brilliant.

A. primuloides (of gardens) is somewhat similar, but the foliage is more pointed, and much more beset with very silvery hairs, so that the winter rosettes are very silvery and quite felted. The flowers, too, are more substantial and of better outline. A. Watkinsii approaches nearer to A. sarmentosa (type), but has flowers of notably rich colouring. All these forms of A. sarmentosa are of about equal ease of culture, though one would have expected the extra-hairy A. primuloides to be more difficult in suburban gardens.

Though seldom grown so, the members of the sarmentosa set are very suitable for dry-wall culture, and will succeed either on the face or upon the wall top. A very beautiful group "coping" a wall is, or was, to be seen at Mounton House, Chepstow. When all is said, however, the easiest, showiest, and most attractive of the Androsaces is A. Laggeri, which, given a bed of peat and stone chips in full sun, never fails to provide, spring by spring, sheets of brilliant rose flowers. *R. V. G. W.*

WATER GARDEN.

Both the rock garden and the water garden have played a large part in the return of a more natural style of gardening and the two are often associated. A pond or stream is a precious possession, for it may be made one of the most enchanting features of the pleasure ground and where water does not exist naturally it is easy to make provision for it. Where the space is very limited small pools lined with cement may, with a little skill and artistic perception, be made to include a few of the delightful water plants that are amongst the most brilliant of all flowers. By the use of even a few tubs it is possible to grow these showy aquatics, for, contrary to the general belief, a great depth of water is not required for the majority of aquatic subjects.

All water plants revel in full exposure to the sun's rays, therefore the water garden should be in a position that is fully exposed to sunshine although, of course, where it is of large extent a few trees that love moisture, such as Willows, may be introduced along the margins. Those whose gardens do not contain a natural piece of water will require to excavate the ground to a depth of some three feet and encase the sides and bottom with cement. It is advisable to have a waste pipe at the bottom of the pool and a higher outlet to carry off the overflow of water, but it is not necessary to have a continuous stream of water. Where tubs or small concrete basins are used sufficient water should be run in each day to prevent stagnation and to keep the plants in good health. If the water pool is close to the dwelling house it is possible to lead the rain water from the roof into the pool and this will save trouble in supplying water artificially. Where the latter is necessary it is easily done by placing a hose in the pool and allowing the water to flow for a few hours, say once a week or so.

In constructing a pond or pool with cement sides it is very necessary that the work is done when there is no danger of frost, for the action of frost will disturb the cement and make it very difficult to keep the pool water-tight. Fish may be introduced, and these will not only provide an additional attraction, but serve to prevent a stagnant condition. A warning, however, must be given against introducing fish into ponds or pools that have been recently formed with cement, for the acid in the cement will kill the fish in a very short time. After a few weeks, however, if the water has been changed once or twice there will be no danger in this respect.

The most beautiful aquatics are the Nymphaeas, of which there are so many glorious species and varieties, and to grow these well, special compost is necessary, consisting of two-thirds good loam enriched with one-third of its bulk of thoroughly decayed manure. The addition of two pounds of fine bone-meal to each bushel of the soil is also to be recommended.

In the case of large lakes and ponds the best method of planting Nymphaeas is to place the roots in shallow baskets filled with the compost recommended and to sink the baskets in the desired positions. In due course, the roots grow through the basket into the soil, and in time the basket will decay and disappear. The best time for planting is from the end of April to the middle of June. For the margins of ponds and lakes, and where the water is very shallow, Nymphaeas of the Laydekeri and Odorata groups should be selected, and where the water is not more than six to twelve inches deep N. pygmaea alba and N. p. Helvola, which are both very small growing plants, may be selected, but all the larger and stronger growing Nymphaeas may be planted in water eighteen inches to twenty-four inches deep. Gold fish will serve to keep the water clean and they will also destroy the larvae of insects. The introduction of such plants as Cabomba and Anacharis will assist in keeping the water sweet as well as in providing variety.

A list of Nymphaeas may be found in any nurseryman's catalogue, but for those who wish to grow the plants in tubs, small boxes, or basins, the following may be recommended: Nymphaea Laydekeri fulgens, with flowers of amaranth red; N. L. liliacea, with sweetly scented rosy lilac flowers; N. L. rosea, rosy carmine; N. odorata alba, white; N. o. exquisite, rose; N. o. suavissima, clear pink; N. o. sulphurea, sulphur-yellow; N. pygmaea alba, white, and N. p. Helvola, sulphur.

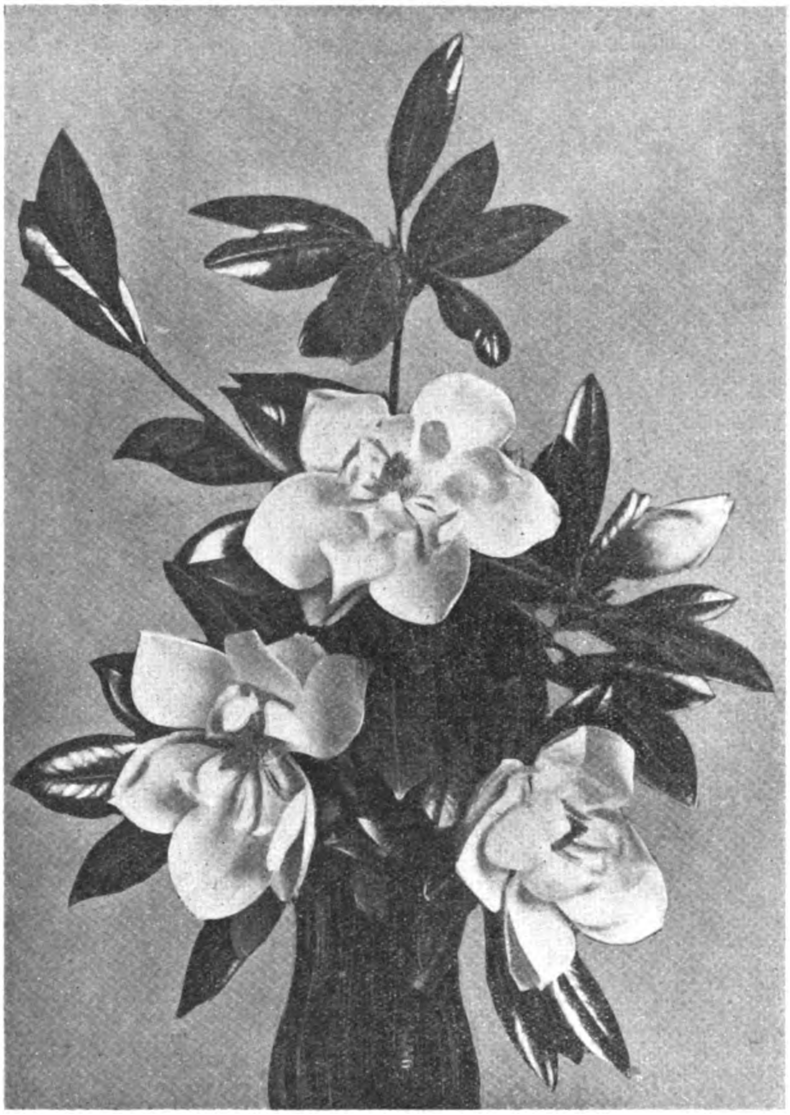


FIG. 96.—MAGNOLIA GRANDIFLORA: SHOWING HOW THE FLOWERS OPEN.

(see p. 234).

Certain Irises are valuable for the water garden, including I. Monnieri and its variety aurea, I. orientalis (syn. ochroleuca), with white and yellow flowers; I Monspur Dorothy Foster, and I. M. Premier, in shades of light blue and violet; I. sibirica Perry's Blue and Thelma Perry, both of clear China-blue shade; Duke of York, Lady Northcliffe, and Nora Distin, in violet shades, and Snow Queen. The Gladwyn, I. foetidissima, is very effective, and after its purple flowers are over the bright coral-red seed-pods are especially attractive; I. Pseud-acorus, both the yellow type and the white and sulphur varieties are all very beautiful. Then there is I. laevigata in variety, and for the margins of the water garden nothing is more handsome than I. Kaempferi, which includes varieties of almost all colours.

There are many beautiful water-loving plants suitable for the margins of the water garden, including Astilbes in variety; Spiraeas, the large-leaved Gunnera manicata; Cortaderia (syn. Gynerium) argentea, Kniphofia (Tritoma) Uvaria grandiflora, Lythrum Salicaria, Primula japonica, P. rosea, P. sikkimensis, and P. helodoxa; Asarum europaeum, Aconitum autumnale, Astrantias in variety; Boykinia aconitifolia; Cardamine pratensis plena; Chrysobactron Hookeri, Chrysosplenium oppositifolium, Cypripedium pubescens, C. spectabilie, Funkias in variety, Gentiana Andrewsii, G. pneumonanthe; Helonia bullata, Hemerocallis in variety, Houttuynia cordata, Lobelia cardinalis, L. syphilitica, Lysimachia clethroides, Caltha palustris, Meconopsis Wallichii, Mimulus cupreus Brilliant, M. radicans, Myosotis dissitiflora, Parnassia palustris, Polygonum sacchaliense, P. Sieboldii, Rodgersia podophylla, Saxifraga peltata, Senecio clivorum, S. Veitchianus, S. macrophylla and many varieties of Trollius. A few moisture-loving Ferns will give further charm to the water margin and these may be selected for the more shady spots. They include Lastrea Thalypteris; Onoclea sensibilis; Osmunda cinnamomea; O. gracilis and O regalis, and Struthiopteris germanica; the last is suitable for planting in shady dells. *W. Logan.*

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MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.

VIII.—Some Rhododendrons.

THE first week in June found us in camp. Ascending a high range from the dry river valley, we soon entered the forest, where the "Triflorum" Rhododendron still bloomed yellow, red and brown; but the rose "Taliense" was finished, and another species caught my eye. Though not abundant, it was easily picked out by reason of its smooth, tawny trunk, the bark flaking off, revealing an almost glassy surface. Down below the flowers were over, and I almost despaired of finding any. The leaves, though small, were of the "Fortunei" type, not unlike some forms of R. decorum. What, I wondered, were the flowers like? At last, higher up, I came on a fair-sized tree in full bloom, and a lovely sight it was; for the compact trusses, unlike any "Fortunei" Rhododendron I have ever seen, were a beautiful shade of carmine, dark and glowing against the pale green foliage and glazed red trunk. Indeed, despite the distinctive "Fortunei" foliage, the flowers almost made me doubt whether it *was* a "Fortunei." I had visions of a rose-coloured R. Loderi, this fine plant crossed with R. Griffithianum, or with R. Fortunei itself.

The path we followed was cut out of the hillside, high above the glen, the two flanks of the valley facing almost north and south. On our side, besides the "Triflorum," "Taliense" and "Fortunei" Rhododendrons, there were only dense bushes of the small "Lepidotum," still remote from flowering. The "Fortunei" species soon disappeared, but the others persisted for another two thousand or three thousand feet, though in diminishing numbers as other species appeared on the scene.

The next species met with were, an erect undershrub "Lapponicum" with purple flowers, very like the low level "Lapponicum" already described, but differing in foliage and with no scales on the corolla; it grew on sunny banks and was just coming into bloom. Secondly, masses of pink and white-flowered "Anthopogon" growing all up the wooded slopes. Thirdly, a "Souliei" species with delightful yellow flowers, which, if not R. Wardii (or "Lemon Bell") was, apart from its larger corolla, very like it. It was just breaking into flower, a delightful sight, for the flower buds are sometimes yellow, sometimes orange, and sometimes brick red; while the open flowers are always bright sulphur-yellow, with or without a crimson aureole round the base of the ovary. Both flowers and trusses are, I think, larger than in R. Wardii, and the species is, like so many Rhododendrons in this part of the world, extremely floriferous. No doubt it will be demonstrated, when we come down to minute details, such as the presence on this plant of crimson glandular hairs on style, ovary, calyx and pedicel, that it is not R. Wardii at all; but since that name will convey a clear impression of the plant, it may well stand for the present.

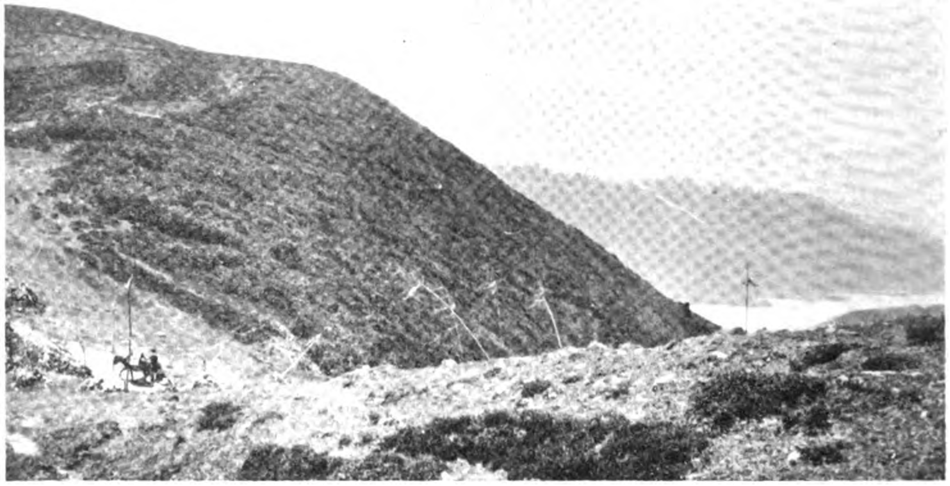

FIG. 97.—RHODODENDRON MOORLAND IN EASTERN TIBET,
14,000 feet to 15,000 feet: Himalayas in the background.

Towards the summit of the range, the small scrub "Lacteum" appeared, and across the valley, sheltering in Abies forest, a dense growth of the large-leafed "Lacteum," neither of them in flower yet, except for a precocicus truss here and there. At the pass, about 14,200 feet, the peaks on either side rising to 15,000–16,000 feet, a surprise awaited me; for the drier slope (Fig. 97) was carpeted ankle deep with three dwarf species, two of which I had never seen before. There was first of all what I have come to regard as the ordinary alpine "Lapponicum" of these parts, which, despite a wide range in flower colour, seems to embrace one species only. It was already in flower, though by no means in full bloom. The second was a charming little "Anthopogon," easily distinguished from its more lanky relative of the woods by habit, foliage, and certain minute characters revealed under the lens. Only here and there was a bushlet in flower—snow-white, never pink, contrasting with the dark chocolate-brown—never rust-red, leaf indumentum. This I regard as one of the most effective dwarf Rhododendrons I have ever come across. The third species, which in places occupied the whole ground with its dark green hassocks, was in such fast-locked bud that it would not be fully open for another three weeks. Its obovate leaves were very aromatic, but there were only a few widely scattered scales on the under surface. In the previous year it had been a sheet of bloom, the flowers arranged in 3- or 4-flowered trusses, borne on long slender pedicels. In fact I was unable to place it, and when a week later, I found one truss in bloom, the problem was not made any easier. The general habit and large, leafy calyx certainly suggest "Saluenense."

After crossing the pass we camped close to the summit. A week in a mist bath, with almost continuous rain and never a gleam of sunshine, convinced us that June was a bad month; and on the 13th we descended to our new base in the *rong*, having waited in vain to see the moorland as it must presently appear, a choppy sea of many colours.

During this week, however, we discovered many interesting plants, species of Primula and Meconopsis in particular. Of them I shall have something to say later; for the present I will confine my attention to the Rhododendrons. Before we left, both the alpine "Lacteum" and the large-leafed forest "Lacteum" were beginning to flower. The latter seems to be peculiarly adaptable, for though normally a small forest tree with very large leaves, growing socially as undergrowth to Abies, it ascends into the alpine realm, where it occurs as a small scrub plant scattered amongst the small-leafed "Lacteum." In all its Protean changes, however, it may easily be recognised by its glabrous leaves, very sticky buds, and absence of a calyx. ("What," asks the critic, "is a "Lacteum" doing with glabrous leaves?'. The answer is that, as in R. Beesianum' there is a thin covering of scattered hairs, at least at some stages). The flowers are almost as variable as the foliage—snow-white, creamy-white, flushed pink, or rose, with a larger or smaller crimson-purple flush at the base, freckled or not. As for the small "Lacteum" (and this *is* a "Lacteum," though I may be wrong about the other) it tried all the colours—white, sulphur, rose, though not all on the same bush, as Farrer described in the case of R. aiolosalpinx. Just as the large "Lacteum" extended into the domain of the small one, so the small one in turn overlapped into the forest and became there a respectable shrub, ten or fifteen feet high. In fact, take them all round, I have never seen Rhododenrons so variable as they are in this country.

If the "Lapponicum" group is a difficult

The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, September 27, and November 1, 1924.

one—and goodness knows it is when you get amongst the carpet forms which clothe the moorland — the "Souliei - Campylocarpum" association now gave infinite trouble to analyse. In the "Lapponicum" group the opposing factors are at least clearly contrasted. One can satisfy oneself quite definitely whether the corolla is lepidote or not, and whether it has a tube or not; whether the style is longer or shorter than the stamens, and whether or not the calyx embraces the ovary —all this quite apart from the question of species or variety. But in the "Souliei-Campylocarpum" complex, as illustrated here, it was generally a question, not of yes or no, but of degree.

In the forest at the bottom of the ravine (altitude 12,000 feet to 13,000 feet) there was a perfect welter of Rhododendrons. The outstanding species were "Lemon Bell," the rose "Campylocarpum" with very bristly leaves, and a pretty species with freckled lemon flowers, sometimes flushed salmon, and elongated leaves, first noticed by Cawdor. Intermediate between these were half-a-dozen other species which almost defied classification. One had large flowers of a beautiful ivory-white, with the bristly petioles of the rose "Campylocarpum," and the crimson, glandular hairs of "Lemon Bell." Another had flowers of deep rose, heavily spotted, and the "Souliei calyx, but only scattered glandular hairs, which indeed might be entirely lacking from the pedicel; while the leaf under surface was covered with a thin felt of scattered, golden-brown hairs, more like that of the rose "Campylocarpum."

In some, the bases of the filaments were whiskered, in others glabrous, while the calyx also varied (in specimens which, in other respects, appeared to be identical) from the big, leafy type of the rose "Campylocarpum."

Of these factors then, which are vital and which superficial? Flower colour may be dismissed, since we have seen how it varies in other species; though to the cultivator it is of first rate importance. The remaining factors may conveniently be divided into palpable and microscopic.

Amongst the former are shape of corolla, character of calyx, shape and size of leaf, petiole, bristly or glabrous, and presence or absence of indumentum. Amongst the latter, presence or absence of glands on ovary, style, calyx, and petiole and filaments whiskered or not. And there can be no doubt that all these factors varied, and that nearly every factor was associated with nearly every other factor in some plant or other.

From the horticultural point of view perhaps the most interesting feature of all these Rhododendrons was their late-flowering season, and still later date of breaking. June rather than May is the month of Rhododendrons in this part of Asia, while nearly all the alpines may be seen in flower in July. Only in the depths of the glens and at low altitudes do any of the leaf-buds begin to break before the beginning of June, and though they may readjust themselves to some extent in Britain, still the tendency is to break late, and they are not likely to do so before May.

After reaching our new quarters in the *rong*, I found a most charming Rhododendron, with the habit and foliage of a "Triflorum," though the corolla, both in colour and form, was much more like a "Heliolepis"; moreover, there were usually from four to six flowers in the truss. The colour was deep rosy-purple, and the long pedicels and nodding flowers gave to the slim shrub a delightful airy grace. It was past full bloom on June 16 in the forest, the whole glen being stained with its masses of flowers. By the end of the month it was over. It was not, however, till we visited the Himalaya at the end of June that we saw Rhododendrons in their wildest extravagance. Of that I shall write later.

For the present we may note the comparative poverty of alpine dwarf species, and particularly of the "Lapponicum" group so richly represented in western China; the poverty of tree species—only the "Fortunei," "Grande," and large "Lacteum" being, by courtesy, "trees"; the complete absence of large leafed species of the "Falconeri" type for example, and the lack of great variety, although fair numbers of groups were represented. So far, excluding varieties and doubtful species, we had found about twenty good species, belonging to at least thirteen distinct groups, a number which was presently to be doubled in a dramatic manner.

It is not, however, to be assumed that we were finding nothing but Rhododendrons; far from it. Above the Abies forest were seen many shrubs, species of Willow, Lonicera, a fine variety of Potentilla fruticosa, Berberis, and so on. The country is not rich in shrubs, or trees either; nevertheless, between 12,000 feet and 15,000 feet, several interesting plants occur. There is, for instance, a Berberis with very glaucous foliage and a single flower, like a yellow button in the centre of each leafy rosette. A species of Willow found in the alpine region, has unusually large spikes, silvery in the female, reddish in the male. Lower down, a bushy Lonicera, with large, straw-yellow flowers in great abundance, forms a handsome object in thickets—it will be still more handsome in fruit. Two species of Rose, one with scented, mossy buds and deep pink flowers, the other with white flowers and rather small leaves, deserve notice; I like them in flower, and await with interest their autumnal appearance. These two, with R. sericea, sum up the local Roses.

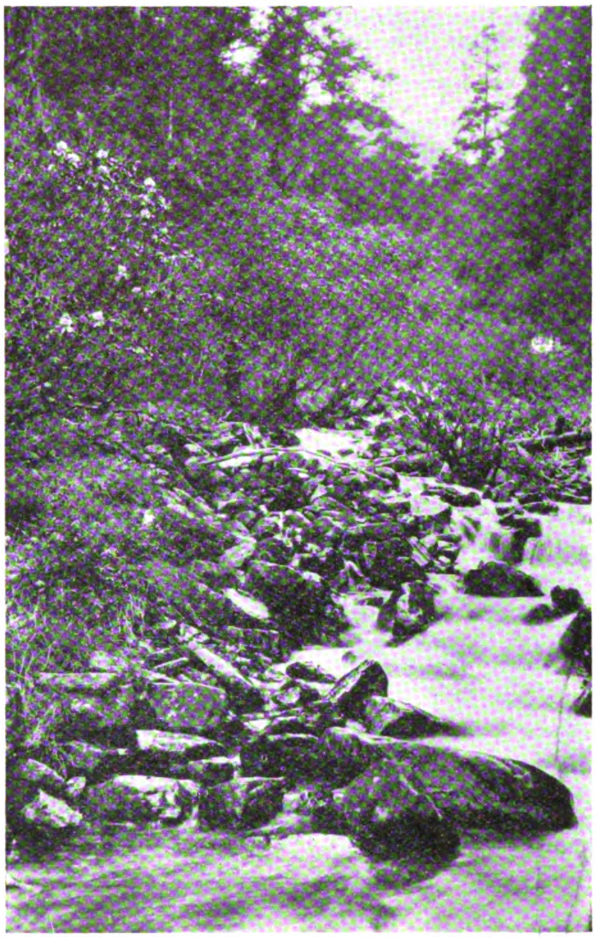

FIG. 98.—YELLOW "SOULIEI" RHODODENDRON IN EASTERN TIBET.

In the forest grows a very hairy Lonicera, with attractive foliage. I did not see it in flower, and by the end of June it was in fruit, with fat, translucent, scarlet berries hanging by long threads. Another species has large, glossy leaves and small purple flowers—also worth keeping an eye on as a good foliage plant. Indeed, after Rhododendron, and I suppose Salix, there are more species of Lonicera than of any other woody genus, not excepting Berberis, which, as a matter of fact, is badly off for species. But by far the most lovely Lonicera is a dwarf plant with glaucous foliage and large Plum-purple flowers; but it is rare and remote—I have only seen it at one place.

Of other shrubs, I have come across only one species of Hydrangea, and it is nothing to boast of; one species of Viburnum—good, but no better than many others; a white-flowered Pieris, common also in China; and not a single Daphne, Enkianthus, or even Ivy! There are several species of Rubus, not one of any merit whatsoever, nor are they sufficiently common to be conspicuous; and two species of Cherry, one a small tree, smothered with snowy white flowers in June, the other little more than a shrub, with delightful little pink flowers, also blooming merrily in June—and at the end of June. There are also two dwarf Willows, one of which, with very large leaves, deserves honourable mention, and a small, forest Euonymus, with chocolate-red flowers, and, of course, two or three species of Ribes.

On the whole the shrubs, in this particular neighbourhood at any rate, are not impressive. Neither are the trees, with the exception of two species—a five-needled Pine with large cones, something like P. Armandii, and a magnificent tree, upwards of 120 feet high; and a Picea which forms great forests in the *rong*, and attains a height of over 150 feet. Besides these one notices a Tsuga, Maple, Oak, Abies, Larch, Poplar, Birch, and Hippophaë. *F. Kingdon Ward.*

NOTES FROM EDINBURGH.

Plant life in the Royal Botanic Garden, Edinburgh, is feeling the gentle touch of spring, and Crocuses, Snowflakes, and other spring-flowering bulbs are in flower. In the rock garden there is a particularly interesting patch of the delightful Iris reticulata growing in grass. In another part I. Histrio may be seen. Of the Crocuses there is one in particular worthy of mention. It is C. banaticus, a native of Transsylvania and its orange anthers harmonise well with the fine purple colour of the perianth. Here and there the dainty blossoms of Narcissus cyclamineus appear, while the pale N. pallidus is flowering in the herbaceous border. Saxifragas, which are a feature of the rock garden, are opening, among them S. Elizabethae, S. apiculata, and S. Burseriana with some of its varieties. In the wild garden the pink blossoms of S. ligulata are noticeable. Here also, and in parts of the rock garden, two Hellebores, H. colchicus and H. antiquorum, are in flower.

Among shrubby subjects there are a few worthy of attention. Daphne Mezereum has opened its fragrant blossoms, while Erica carnea is making an effective display. Rhododendron moupinense, one of the earliest to flower, suffers in Edinburgh from frost, but some blossoms have escaped unscathed. Another interesting Ericaceous shrub is Cassandra (or Andromeda) calyculata, which possesses relatively large flowers and is not too frequently seen doing really well in gardens. It was introduced from North America in 1748. By the pond, the pink flowers of the curious parasitic Lathraea Clandestina are in evidence. One of the outstanding features of the garden is the hedge of Rhododendron praecox now in flower, which indicates the possibilities of this excellent hybrid. Two other Rhododendrons of interest are R. barbatum and R. acuminatum.

At this time of year the houses provide an attractive display. Five leguminous plants in flower in the central greenhouse deserve mention. A specimen of Eutaxia myrtifolia in the east corridor is flowering freely, while on the staging there are pot plants of the scarlet-flowered, woolly-leaved Kennedya prostrata, the long sprays of Aotus gracillima, and the very decorative Chorizema ilicifolia are notable features. Hardenbergia monophylla, a blue-flowered species, is effective, and a bright display is also afforded by the deep mauve flowers of Prostanthera rotundifolia. Salvia rubescens has produced its deep red flowers over a considerable period. In the west corridor well-flowered specimens of Rondeletia Roezlii and Cestrum Newellii attract attention. Probably the most handsome of Camellias is C. reticulata which exhibits its large red flowers in one of the beds in the centre house.

Of tropical plants those deserving of mention are Brunfelsia calycina and Whitfieldia lateritia, together with Clerodendron infortunatum. Euphorbia fulgens, a very decorative plant, and Thunbergia Vogeliana, with blue flowers and yellow hairs on the inside of the corolla, are flowering in the Bromeliad house. A very interesting member of the Scitamineae, Stromanthe sanguinea, is in flower in the Aroid house. Another member of the same family is the curious, bird-pollinated Strelitzia Reginae, whose pretty orange and blue flowers attract attention.

The collection of Orchids at Edinburgh contains a large number of species, and a very attractive display of these has been made in the Orchid house. Cirrhopetalum Mastersianum, a native of Java, bears orange flowers, and near by is Angraecum eburneum, an old species not often seen. Good plants of Eria densiflora, E. anchorifera, E. globifera, and E. stellata are on view. Odontoglossums include a fine specimen of O. Edwardii, and there are also O. elegans, O. pulchellum, O. crispum (and its varieties), O. niveum, a very pretty species, and several good plants of O. Rossii majus. A great display has been made with plants of Coelogyne cristata, and its two varieties, alba and lemoniana. There is a fine specimen of C. pulchella and another of C. elata; C. flaccida is also in flower, the last represented by several large plants. Dendrobiums are represented by D. Wardianum and its beautiful form album, which are flowering profusely. D. Brymerianum, an old species, is shown, the flowers being of a golden yellow with a heavily fringed labellum. Others of the genus in flower are D. delicatum, D. crassinode, and D. Kingianum album. Pleione Delavayi, with fine purple flowers, deserves mention. The rare Ponera juncifolia, is an interesting little plant, and another rare species in Platyclinis rufa; both are in flower. Phalaenopsis Luddemanniana has a fine young plant at the end of the flower spike, indicating the natural method of propagation adopted by this species. The curious Trias picta, and a plant of Scaphyglottis Behri also deserve mention, in addition to Maxillaria sanguineum, with grass-like foliage, a very fine plant of the hybrid M. Pourbaixii, M. Sanderiana, M. lepidota, and M. variabilis lutea. The prettiest of the dainty Pleurothallis is P. astrophora, with small, starry-flowers, while P. tridentata, which is never really out of flower, and P. Roezlii, with dark purple, almost black flowers, together with P. ornata, a very curious little species two inches to three inches high, deserve special mention.

A notable plant in the Orchid house is Aerides vandarum, which grows and flowers freely. It is one parent—the other being Vanda teres—of an interesting hybrid, Aerio-Vanda Mundayi, and all three plants are in flower. Cymbidiums have been very prominently displayed during the past two weeks, especially C. eburneum, C. Coningsbyanum, C. Gottianum, C. Alexanderi, C. Iris, and the yellow hybrids, C. edinense and C. Inverleith. There is still a good display of Paphiopedilums.

Three handsome Rhododendrons in the house devoted to these plants deserve special mention. One is a bush of R. irroratum with very beautiful flowers, white, tinged with pink. There is also an imposing plant between fifteen feet and twenty feet high of R. arboreum, with trusses of red flowers. The most striking plant, however, is a magnificent specimen of R. argenteum, about fifteen feet in height and carrying one-hundred-and-twenty trusses of flowers.

The rock house at Edinburgh contains not a few noteworthy plants, and four are particularly interesting just now. These include two Saxifragas, viz., S. Irvingii, a very fine hybrid with pink blossoms and grey foliage and S. Boydii, which produces flowers of a deep yellow colour. A clump of Iris unguicularis alba is noteworthy, and opposite it a plant of Gaultheria fragrantissima is carrying a great number of purple fruits, which render the plant most attractive. *Robert H. Jeffers.*

NOTES FROM WISLEY.

The pageant of spring flowers is now in evidence at Wisley, where one may see blue drifts of Scillas, Grape Hyacinths, and Chionodoxas, for which the ornate foliage of hardy Cyclamen makes a splendid background. Iris reticulata, Erythroniums, and Tulipa Kaufmanniana, of which there is a handsome variety named Brilliant, are also conspicuous.

Primulas, such as Primula denticulata and P. Juliae, are commencing to bloom, while P. Winteri seems likely to continue in flower for some time yet. In addition to large numbers of coloured forms of the common Primrose, which luxuriate in the rock garden, double Primroses are to be found here. These are not often seen in the gardens of to-day, although they are by no means unattractive.

Of the Primulas in the alpine house, P Juliana and a similar but paler-flowered hybrid, × Crispii, continue to throw up a prodigious number of blooms. Primula frondosa and an improved form of P. marginata are also flowering well.

Several of the Anemones are in flower on the rock garden, such as A. apennina, A. Hepatica alba, and A. Pulsatilla of which there is a pretty rosy-flowered variety, Mrs. van de Elst. In the moraine, Morisia hypogaea and Saxifraga Boydii alba are in flower. A peculiar rock plant in bloom near the top of the rock garden is Adonis Nadorkakii, the foliage of which is very finely cut. This incision is not confined to the leaves but extends to the perianth. In the case of well-grown and regular blooms this is quite a striking feature, but irregular blossoms appear to be suffering from the attack of some predatory insect. Another curious plant in flower near the bog garden is Trachystemon orientale, which has blue, Borage-like flowers. When these open, the petals immediately roll back and an abundance of white pollen is shed.

In spite of severe night frosts—22° have recently been registered at Wisley—plants of Pieris japonica are flowering to perfection in the wild garden, where also a few Camellia blooms are setting an example to the Rhododendrons. In the shrub borders a strong scent similar to that of Hawthorn blossom attracts one to Nuttalia cerasiformis, a white-flowered shrub which somewhat resembles the flowering Currant. The male and female flowers occur on different plants. Corylopsis spicata is also in bloom but, unlike the Nuttalia, has as yet no foliage accompanying the flowers, which are yellowish and have a pleasant, if not strong, perfume.

A trial of modern varieties of Narcissi is in progress beneath the old standard Apple trees. Among the first to bloom in the long trumpet section were Golden Herald, Sulphur and Avice, while in the incomparabilis group a bicolor named Duncan has been flowering for some time. *J. G. White.*

FOREIGN CORRESPONDENCE.

ROSE JOH. C. M. MENSING.

Concerning your recent reference to Roses in the United States of America, I venture to add, in reference to varieties especially adapted for forcing, the new variety Joh. C. M. Mensing.

When making a journey in 1924 to the big Dutch Rose nurseries at Aalsmeer, I visited, among others, Messrs. Evelenz and Sons of that town. Mr. Evelenz had already shown me at the exhibition at Amsterdam a clear-pink sport from Ophelia named Joh. C. M. Mensing, which occupied a table between Ophelia and Mme. Butterfly, and had received the Gold and Silver Medal. It was a wonderful sight—the clear-pink colour, the large flowers, held firmly on long stems, attracting the attention of all growers present.

This variety was then almost unknown to me, as to most others, and Mr. Evelenz invited me to see the Rose growing. When visiting Aalsmeer I saw it both in the open and under forcing conditions (in a house containing over a thousand plants), and obtained a very favourable impression of its qualities. My anticipations as to the prospects of the variety were more than fulfilled, and I obtained from the raiser all the available eyes.

In my opinion it is the finest Rose in the Ophelia class which has yet appeared, as it is large-flowered, upright, pure in colour, and excellent for forcing. *Hermann Kroger.*

NOTICES OF BOOKS.

Shrubs of Indiana.

This work* is on similar lines to the companion volume, *Trees of Indiana*, and has been prepared by Mr. Charles C. Deam, the State Forester, whose knowledge of the flora of Indiana is peculiarly intimate and extensive. In the foreword by Mr. S. Coulter we find the interesting statement that "the shrubs of Indiana have been so abundant that their economic importance has been overlooked. It is possible that, as in the case of our forests, they will not be fully appreciated until they are practically exterminated. Northern Indiana formerly had hundreds of acres of Blueberry and Cranberry marshes, which were drained to make farm lands. If these marshes existed to-day they would be worth far more for their berry crop than they are for farm land. Indeed, there is little doubt that Blueberry farming will soon become an industry in northern Indiana."

We gather that, based on their economic value, the shrubs of Indiana may be divided broadly into four classes, i.e., those that furnish shelter, refuge, and food for birds; those that are used in medicine and industry; those whose fruits are used as food; and, finally, those suitable for ornamental planting. The term shrub, as used in this book, is applied to all the native and naturalised woody plants that occur in the State of Indiana, but which never, or but rarely reach tree size. Woody plants that at maturity usually attain a diameter of about ten cm. at breast height are arbitrarily regarded as trees, and those of a lesser diameter as shrubs. Vines are considered as shrubs, but Cornus canadensis, which is not strictly a woody plant, is not included in the list, while Linnaea borealis var. americana and Menispermum canadensis are also omitted.

The author recognises a hundred and forty-three species and varieties and Rosa Eglanteria and Lonicera japonica are the only two introduced plants he includes. The species are grouped in their Natural Orders and all but two of the one hundred and forty-six fine illustrations are reproduced from specimens in the author's herbarium. Each species or variety is described in detail and then follow observations on its distribution, and "remarks;" these last are peculiarly interesting and contain notes of especially fine specimens of the plant referred to as well as references to its economic or decorative value.

Shrubs of Indiana extends to 351 pages, including an index of fourteen pages and a key to all the genera quoted. There is also a useful glossary at the end of the book and a special key to the species of the genus Salix. Some of the plant names are given a different spelling to the one familiar in this country; for instance, Euonymus is given as Evonymus, Symphoricarpus as Symphoricarpos, and Wistaria as Wisteria. These, however, are minor points in a book that merits high commendation. It is well printed and an altogether fine production of which the author and the State of Indiana may justly feel proud.

Common-sense Gardening.

A new edition of Mr. W. W. Pettigrew's book† on gardening has been issued. The author is well-known as the Superintendent of the Manchester Public Parks, and during the war he devoted his whole time and energies to the allotment movement, giving amateur cultivators in the Manchester district most valuable advice, with the result that allotments in those parts were as successful as in any other district of the country. His book is written in simple language and shows that the author is well acquainted by practical experience with all the subjects of which he deals.

The opening chapter deals with the cultivation of the soil and describes in a simple manner the methods of double digging, trenching, etc. This is followed by a chapter on manures and manuring in which both organic and inorganic fertilisers are dealt with. In the section dealing with vegetable growing all the usual crops are dealt with and selections of the best varieties of each are given. The chapters on vegetables are followed by others on fruit culture and these in turn by one on herbaceous flowering plants. Special chapters are devoted to such flowers as Dahlias, Chrysanthemums, Sweet Peas and Roses. Mr. Pettigrew also deals with ornamental trees and shrubs, and his lists of flowering trees, flowering shrubs, evergreen shrubs, hedge plants and woody climbers include all the best things for suburban gardens. A few hints on laying out villa gardens and the making of paths and rock gardens, in all cases accompanied by diagrams.

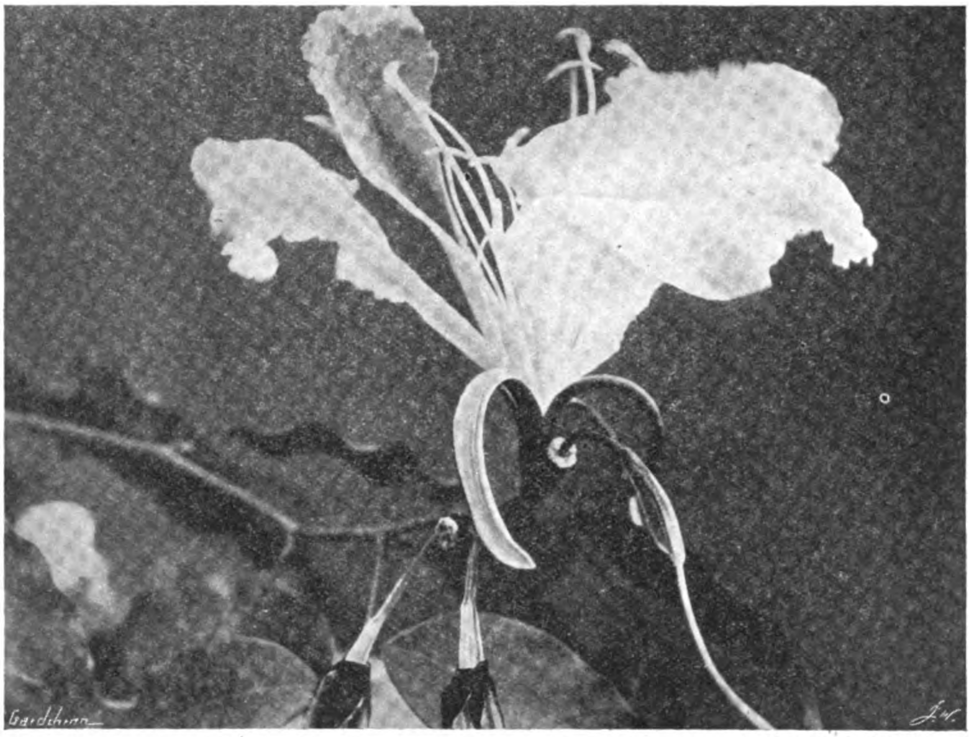

Photo C. P. Raffill.

FIG. 99.—BAIKIAEA INSIGNIS.

PLANTS NEW OR NOTEWORTHY.

BAIKIAEA INSIGNIS.

The genus Baikiaea was founded by Bentham in *Genera Plantarum*, 1865, and B. insignis was first described by the same authority in the *Transactions of the Linnean Society*, Vol. 25, p. 313, accompanied by a very good illustration, t. 41, but the figure was evidently drawn from an herbarium specimen as it shows the flower growing in a pendant manner, whereas, as is shown in Fig. 99, the blooms are upright.

Bentham placed Baikiaea in the tribe Amherstieae, and it is said to have the largest flower in the sub-order Caesalpinieae. The specimen illustrated, which flowered in the Aroid House at Kew last June, measured ten inches across and five inches in width.

According to the *Flora of Tropical Africa*, Baikiaea insignis is a tree some thirty or forty feet high and introduced from West tropical Africa; Bentham gives the habitat as Oban, South Nigeria, and Oliver, the Island of Fernando-Po.

The leaflets are glabrous, variable in size, and very coriaceous. In dried specimens sent from Africa, some of the leaflets are seven inches long and four-and-a-half inches wide; they are not so big as this on the plant growing at Kew. They are ovate-elliptic and have a prominent mid-rib, especially on the underside. The lateral leaflets are often alternate, the lateral nervures being obscure. The petioles are stout, but not more than a quarter-inch in length; the axis of the raceme is not more than an inch long and, together with the short, thick pedicles and oblong or clavate flower buds, is clothed with a short, thick, velvety ferruginous tomentum. The unopened flower bud is some two-and-a-quarter inches long and not unlike a Magnolia bud in appearance. The calyx tube is turbinate, stout, half-an-inch to three-quarters-of-an-inch long. The calyx segments, when fully developed, are about three inches in length and have a silky, villous surface within. The petals are six inches long, more or less, and externally thinly pilose, as is their mid-rib within; the lateral nervures are directed forwards. The stamens are alternately shorter, the longer ones nearly equal in length to the petals. The short sheath is villous externally, and the stipes of the ovary are about one inch long.

The flowering shoot illustrated in Fig. 99 is reproduced about one-third natural size. The recurving sepals, covered with the ferruginous "velvet" on the outer surface show clearly. The calyx tube is also well seen on the flowers from which the segments have fallen, especially on the one showing the developing seed pod, with the pistil still attached.

There are one or two other species of Baikiaea, including B. minor, Oliver; B. eminis, Taub, from German East Africa; B. Zenkeri, Harms, from the Cameroons, and others still unnamed, including a beautiful fragrant, white-flowered species with a yellow keel and white stamens, sent by Mr. John Gossweiler from Angola. It is doubtful whether any of these latter species are in cultivation.

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* *Shrubs of Indiana*. By Charles C. Deam. Department of Conservation, State of Indiana. Publication No. 44.

† *Common-sense Gardening*. By W. W. Pettigrew. Sunday Chronicle, Withy Grove, Manchester. Price 6d.

ORCHID NOTES AND GLEANINGS.

NEW HYBRID DENDROBIUMS.

Flowers of four very pretty new hybrid Dendrobiums are sent by Frederick J. Hanbury, Esq., Brockhurst, East Grinstead (gr. Mr. Matthews).

Dendrobium Mary J. S. Hanbury (chessingtonense × Melpomene) has a fascicle of three flowers, equal in size to those of D. nobile, but of bright yellow colour with dark claret base to the lip.

Flowers of four others of the same cross are sent, varying in the tint of yellow and shade of the claret colour in the lip. Dendrobium Matthewsianum (nobile elegans × xanthocentrum) has white sepals and petals with pale mauve tips. The lip is broad, the disc being dark maroon colour and the tip mauve.

Dendrobium Griselda A. Fox (nobile nobilius × Florence E. King) is a flower of the largest size and the best in its section; it is white, flushed with mauve, the darker tint on the outer parts. The base of the lip is ruby-claret with a cream-white band, the tip and margin coloured like the petals.

Dendrobium Kennobile (Kenneth × nobile delicata) has flowers with narrower segments than in D. nobile; they are white, with a claret-purple disc to the lip, which is elongated and flushed with rose in front. It is a very interesting cross, as it indicates the correctness of the record of D. Kenneth raised by the late Norman C. Cookson, between D. Bensoniae and D. MacCarthiae, which was not very clearly shown in D. Kenneth. In the present hybrid there are distinct traces of D. MacCarthiae, especially in the lip.

BRASSO-CATTLEYA WARNHAM BEAUTY.

Examination of a flower of this superb Brasso-Cattleya, which has bloomed in the collection of C. J. Lucas, Esq., Warnham Court, Horsham, again shows the advantages of well-selected parents for hybridisation. It was raised from Brasso-Cattleya Digbyano-Mossiæ, the first and still one of the finest of its class, crossed with Cattleya-Tityus (Enid × Octave Doin) which in its composition includes all the best types of the C. labiata section and produces in this hybrid a novelty of perfect beauty.

All the segments of Brasso-Cattleya Warnham Beauty are broad and especially the petals and lip, the latter being widely expanded and fringed. The sepals and petals are coloured soft blush-rose, the lip glowing ruby-purple with a clear yellow disc.

ONCIDIUM CHRYSODIPTERUM, HEY HOUSE VARIETY.

J. McCartney, Esq., Hey House, Tonge Moor Road, Bolton, sends a lateral spray of two flowers of a specially good form of this beautiful Oncidium, which was always one of the rarest of the genus, and now generally believed to be lost to gardens.

O. chrysodipterum is of the O. macranthum section, but totally distinct. The flowers, which are each three inches across, have broadly ovate sepals on short, semi-terete bases, and are coloured light chestnut-brown, with narrow, yellow margins. The petals slightly shorter, and coloured bright yellow, with chestnut-brown markings on the inner halves; the margins are undulated. The lip is linear, yellow, stained with brown in front of the fleshy, toothed crest, which has two triangular, deflexed auricles and some yellow teeth round the central plate. It is supposed to be Andean, but little is known about its habitat, for the original or type plant was obtained by Messrs. Jas. Veitch and Sons at a London sale; this specimen flowered in 1891, and was purchased later by the Hon. F. L. Ames, Massachusetts, U.S.A. The species seems to have been imported since as an occasional plant among others. The variety under notice was given an Award of Merit at Manchester.

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

SENECIO ELEGANS.

This hardy annual is very useful for growing in pots for conservatory and greenhouse decoration; the colours range from crimson, purple, and rose, to white. The plants usually grow about eighteen inches tall, but there is a dwarf strain, the plants of which only attain a height of nine inches.

Seeds may be sown about the middle of September in cold frames, or during February or early March. The seedlings may be pricked off into boxes or placed singly in small pots; in any case, the successful cultivation of this plant presents no difficulty, as it grows freely in any ordinary potting soil.

The young plants should be potted on as they require it until they are in six-inch pots, in which sized receptacles they should be flowered; they require the cool, airy conditions usually accorded to this class of plant.

SCABIOSA ATROPURPUREA.

Although really a biennial, this plant succeeds perfectly, and is usually treated as an annual. Seeds may be sown either about the middle of September for spring flowering, or during February and March for summer blooming, and again during June for furnishing a display during late summer and autumn.

The seedlings should be pricked off singly into small pots, and their subsequent cultivation consists in potting them on as they require it until they are in their flowering pots. They grow some three feet tall, and may be flowered in six-inch or seven-inch pots. Well-grown specimens are very effective for conservatory decoration, as well as for furnishing a supply of cut flowers.

The flowers have a considerable range of colours, including blue, white, rose, pink, Cherry-red, and almost black-purple; there is also a dwarf strain, but this type is not so effective as the tall varieties.

The successful cultivation of Scabiosa atropurpurea presents no difficulty; the plants grow freely in any good potting compost, and require the usual cool, airy conditions advised for this class of plant.

SCHIZANTHUS.

The elegant, light habit of Schizanthus and its beautiful flowers render the plant very popular with all cultivators, and well-grown specimens are useful for conservatory decoration and general decorative purposes.

At one time the only species of Schizanthus cultivated were S. pinnatus and S. Grahamii, the latter now known as S. retusus.

At the present time there are many beautiful varieties to choose from, there being a number of so-called giant or grandiflora strains, while the Wisetonensis type in many beautiful varieties is very popular.

Seeds should be sown about the middle of September in a cool greenhouse or cold frame. The seedlings should be pricked off singly into small pots, and until the beginning of November may be grown in cold frames; after this period they are best wintered in a cool, airy house, where they should be placed near the roof glass. They are best wintered in forty-eight-sized pots, and early in the New Year should be ready for placing in six-inch or seven-inch pots.

The Wisetonensis varieties are of a free, branching, compact habit, and no pinching is necessary; on the contrary, the grandiflorus varieties may, with advantage, be stopped once or twice, if large, well-furnished specimens are desired. The Schizanthus grow freely in any good potting compost, and, provided the plants are grown in perfectly cool conditions and watered carefully, their successful cultivation presents no difficulty. Beyond a neat, central support no staking is usually required.

The wide range of beautiful and dainty colours, from pure white, through varying shades of yellow, apricot, pink, rose, carmine, crimson, and purple, and in many varying combinations, make them ideal decorative subjects; the flowers also last well in the cut state.

Schizanthus retusus, of which there are numbers of beautiful varieties, is deserving of much more general cultivation, and it is surprising this beautiful plant is not more generally grown, for, apart from its general decorative value, it is an ideal subject for supplying cut flowers, the stiff stems and thinly-spaced flowers being splendid for table decoration.

The successful cultivation of this species is by no means so easy as that of the other types: it needs the same cool, airy treatment, and careful watering. The plants are of a much sparser branching habit than the other types, yet they should not on this account be pinched too much with the object of producing bushy specimens, as the charm of the species and its varieties is in its long shoots, terminated with sprays of flowers. In any case, if any stopping is done, it should only be performed once when the young plants are a few inches high. Good examples may be grown in forty-eight sized pots; if large specimens are required, three plants should be placed in a six-inch pot. In addition to the typical orange- and rose-coloured flowers, there are pure white forms with golden blotches, also pink, rose, and mauve-coloured varieties; the blooms have also been much increased in size.

As in the case of the other types, seeds of this Schizanthus may be sown about the middle of September, and again during February or March. *J. Coutts.*

HARDY FRUIT GARDEN.

LOCAL PLUMS.

Articles relating to local fruits are always of interest. The old Greengage cannot be described as a local fruit, but I have never seen such abundant crops as are produced on trees growing in many cottage and farm gardens of north Essex. Many of these trees are bushes or half standards, raised from suckers, and sometimes possibly from seeds. The trees form shapely heads and do not appear to make excessive growth. So far as I am aware no pruning is carried out in connection with these trees. The Greengage growing under these conditions produces far more satisfactory crops than trees growing on walls and pruned in the usual manner. Many of these latter trees seldom produce good crops and the dying back of both spurs and branches is of frequent occurrence.

The Bullace is another fruit which grows in some of the large hedgerows of north Essex, and is known locally as Shepherd's Bullace. How these latter trees became established in the dense undergrowth of a mixed hedge is difficult to understand. The soil in the locality is a very heavy, yellow clay. These fruits make an excellent preserve.

The wild Crab of the hedgerows varies considerably in its habit and vigour of growth. The fruit, however, does not vary much in size, except when the trees are growing in exceptionally good soil. Where Crabs are growing under favourable conditions they not only form highly ornamental subjects but the fruit is very useful for making into preserves. Growing by the roadsides in East Norfolk fine old specimen Crab trees laden with fruit used to form (and possibly still do) a very picturesque avenue near to one of our famous east coast resorts. *C. Ruse, The Hyde Gardens, near Luton.*

VEGETABLE GARDEN.

SPRING CABBAGES.

Spring Cabbage forms an important crop in gardens, yet a few simple operations connected with the successful culture of this crop are often overlooked. A stimulant in the form of nitrate of soda or sulphate of ammonia may be afforded to the plants at this season, but do not allow these fertilisers to come in contact with the leaves or they would damage them A pinch of either nitrogenous fertiliser should be placed carefully around each plant and the soil afterwards stirred by the use of a hoe.

Cutting should commence so soon as the young tender hearts are formed; it is a mistake to allow these Cabbage to form large, solid hearts before they are used. The delicious flavour of young, quickly-formed Cabbages is greatly appreciated. If the ground can be spared and young Cabbage sprouts are in demand throughout the season the old stems may be left and these will supply a useful succession of greens.

Owing to the care taken by seedsmen in supplying good strains of seed "bolting" is not so prevalent as formerly, but sometimes when passing through allotments and cottage gardens beds containing a number of "bolted" plants may be observed, while on adjoining plots the plants are all looking as well as could be desired. It is difficult to explain the cause of this without knowing full particulars concerning the quality of the seeds, time of sowing, and cultural details which have been afforded the crop. Sometimes, upon close examination, the stems of "bolted" plants show signs of damage, caused either by careless handling, or by destructive insects. Land in good cultivation will produce excellent Cabbages which, owing to their quick growth and early hearting always constitutes a valuable crop. *C. Ruse, The Hyde Gardens, near Luton.*

DURATION OF ASPARAGUS BEDS.

Writing (page 208) in reference to the permanency of Asparagus beds, Mr. H. Markham strongly deprecates what he terms severe cutting, but he makes no attempt to define what constitutes "severe cutting." I may essay the task, though it is not an easy one, because local conditions arise and must have consideration, but it may be summed up in a few simple words which were impressed upon me in my novitiate days. They were: never cut the first and second shoots arising from the stools in spring, and never cut a shoot after June 30. This conveys very distinctly that all other cutting is severe. It was impressed upon me by more than one qualified mentor that if this rule was ignored no other treatment would provide compensation for the loss entailed. One of the lessons was taught on beds of which there were unbroken records reaching back more than a hundred years; they were in full vigour and looked good for a further century of useful life. I have rigidly adopted the system, and if it cannot be proved to be one of the fundamental principles of success it may, at least, be accepted as contributory thereto. The opinions of Mr. Markham and other growers on the point will be useful as well as interesting, seeing that Asparagus is one of the most important crops of the vegetable garden. Your correspondent alludes to raising stocks from seeds. I have found seedlings extraordinarily variable; some make excellent, profitable, productive stools, whereas others, in fact, the majority, are comparatively poor growers. Perhaps correspondents will give of their knowledge on this point too? *W. T.*

HOME CORRESPONDENCE.

Daphne Mezereum.—With respect to the supposed hybrid of this species described by the Rev. E. S. Marshall, I may say that one specimen he kindly gave me showed no evidence whatever of D. Mezereum—it was merely abnormal D. Laureola. I submitted it to Mr. E. M. Holmes, the well-known pharmacognosist, and he agreed after a careful examination of the cortex that there was no sign of D. Mezereum, indeed, Mr. Marshall afterwards told me he thought he had been mistaken. He was inclined to think that another specimen which he found was that hybrid, but I have seen no example of it. The flowering time of the two plants rarely synchronise; on that point information is needed. My late friend was a little inclined to admit hybrids on somewhat vague evidence. *G. Claridge Druce.*

Tree Surgery.—In reply to Mr. Elbert Peets (p. 205), my experience is that tree repairs are but little practised in this country, unless in the case of a few public parks and botanic gardens. Both before and since the publication of my book, *Tree Wounds and Diseases*, referred to by Mr. Peets, I have given advice in a considerable number of cases, principally with reference to old and historic trees, but the number is far short of such as require attention in that way. Here and there, one finds an old Mulberry or Catalpa supported by iron rods or chains but usually in a very crude way, and, as often as not, the band or chain, for want of being loosened in time, becomes half buried in the recently formed wood. It would almost appear as if more attention was given to tree repairs centuries ago than is the case nowadays, for as early as 1670, Evelyn in *Sylva*, under the heading of "Infirmities of Trees," gave some quaint instructions as to the treatment of canker, hollowness, wind shock, blasting, and caterpillars. Miller, in *Gardeners' Dictionary*, published in 1737, refers to wounds and diseases in forest trees, while Forsyth and Pontey, who wrote about the beginning of last century, would appear to have followed Evelyn in their methods. The Government made a grant of £3,000 to Forsyth on condition of his making public the secret of his composition for repairing injuries to the stems of trees. The said composition consisted of fresh cow dung, old lime, wood ashes, and sand, dusted over with ashes of burnt bones. But earlier than any of these writers, at the beginning of the fourteenth century, we find at least two curious and interesting notes as to the treatment of diseased orchard trees. In America it is evidently different to this country in the matter of tree repairs, and Mr. Peets should act on the advice of his publisher, especially as I have no intention at present of bringing out a fresh edition of my book. *A. D. Webster.*

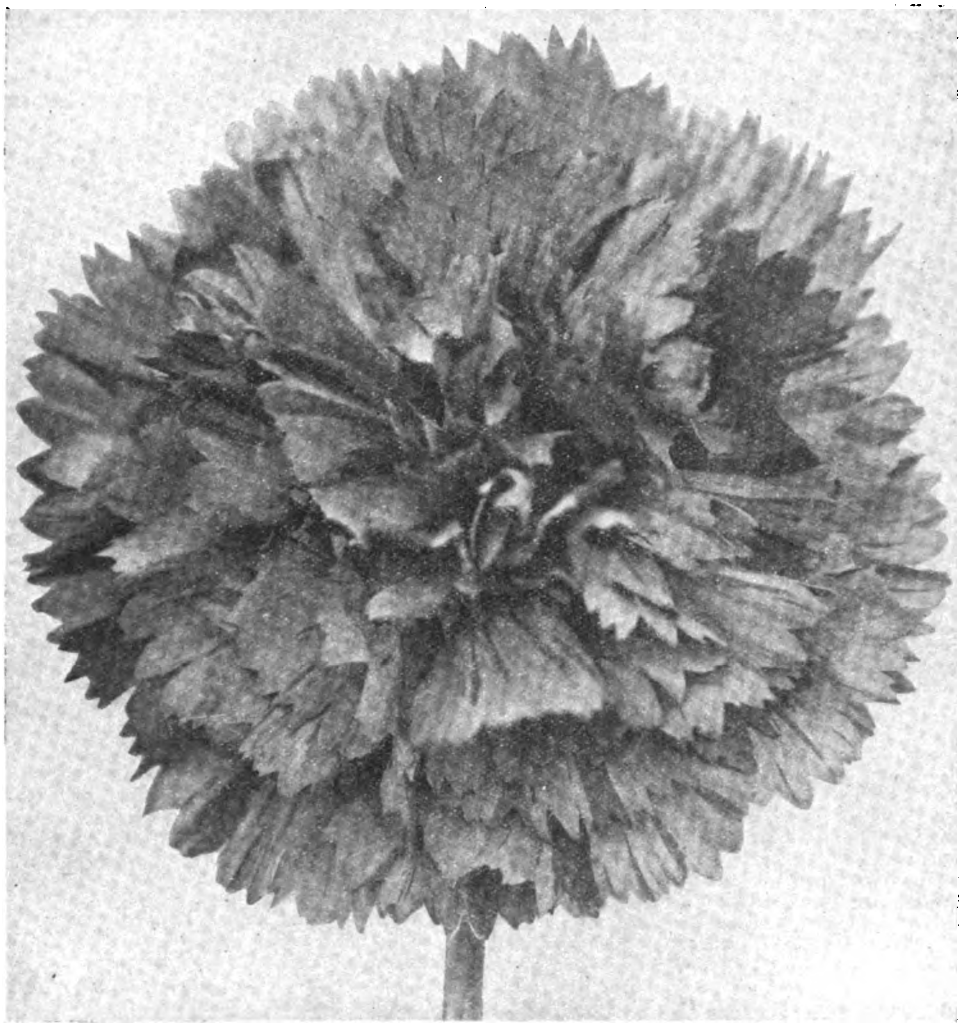

FIG. 100.—CARNATION SHOT SILK.

Award of Merit, British Carnation Society, March 26 (see p. 242).

Carnation Baroness de Brienen.—I agree with your correspondent (page 198) that Carnation Baroness de Brienen does well in large pots. As the plant is an exceptionally strong grower, it may be accommodated by frequently shifting it into larger pots. From cuttings rooted in December or January very large specimens may be had for flowering the following winter. I have never found it necessary to grow Baroness de Brienen two seasons to obtain large specimens. I do not see eye to eye with your correspondent when he states that the young shoots should be thinned out to prevent overcrowding. A better plan is to slope the stakes outward, thereby keeping the centre of the plant open and allowing the young growths plenty of room to develop. A young shoot removed is always a flower lost, and all flowers are valuable, especially in the winter months. No Carnation I know gives a greater percentage of flowers than Baroness de Brienen. Being an exceptionally strong grower the plants need plenty of nourishment, and if this is given them, I consider there is no need to thin out the young growths. *J. A. Kirkwood, The Gardens, Sutton Court, Guildford.*

Bees and Apple Blossom.—As a bee-keeper I have been interested in the discussion as to whether bees help to pollinate Apple blossom. After years of observation I have no hesitation in stating they do help if the weather is favourable. In recent years we have had a succession of cold and wet periods when the trees were in bloom, and such weather prevents bees from collecting pollen. They will not visit the trees when the pollen is wet, and it is also useless as a fertilizing agent in that condition, so I fail to see why your correspondents should blame the "busy bees" for the weather. In certain districts there are counter attractions at the time the Apple trees are in flower—such as Gorse; Clover or Charlock are not in bloom at that time as *Market Grower* states. On Saturday, February 28, my bees were going into a Peach-house where the trees were in full flower; I watched them for a considerable time but did not see a single bee visit a Peach-flower—the counter attraction was a batch of Freesias in full flower in the house. I also find that the common Laurel has a great attraction for bees; they work on the undersides of the leaves, but what they get therefrom I do not know. Once only have I come across a case of bees eating fruit and this was in a garden near Windsor; several swarms were bought in early summer, and when the Peaches were ripe the bees could be seen on the ripe fruit in great clusters. When I pointed this out to my employer he told me to destroy the bees, but on looking into the hive we found the little workers had made a quantity of honey, so that saved their lives. I remained at Windsor five years but never saw the bees touch fruit again. The bees in question were Italian hybrids, not the English black bee. *Grigor Roy, Halswell Park Gardens, Bridgewater.*

Apple-Leaf Scorch.—Dr. H. E. Durham (p. 223) apparently draws his own conclusions from the Long Ashton experiments, and they are the exact opposite to those of Mr T. Wallace, who is responsible for the work. I believe it is generally considered that one of the outstanding lessons of the experiments is that lack of potash is one of the causes of leaf scorch. In the *Report* for 1922, p. 13, referring to the trees which received no nutrient solution, we are informed: "Leaf scorch was present as early as May 2 and was very severe throughout the season." The trees which received the complete nutrient solution also suffered badly from leaf scorch. This was corrected in the following year by increasing the potash and decreasing the nitrogen in the original nutrient solution. The *Report* for 1923, p. 57, states: "Increasing the amount of potash in the original nutrient solution was entirely effective in preventing the development of leaf scorch throughout the season." But again where potash was omitted (p. 53), "early in the season brown streaks appeared between the veins, and from July onwards most of the leaflets developed brown marginal leaf scorch from an early stage in their development." Turning now to the article on "Leaf Scorch on Fruit Trees" in the *Report* for 1921, we are told (p. 120): "There are three factors which stand out most clearly, viz., potash effect, the influence of grass, and rootstock action. The correlation which has been noted between the amount of potash supply, root growth, and the degree of leaf scorch, points very definitely towards the liberal application of potash manures as a remedial measure, unless it is known that the soil in question has already an abundant supply of available potash." Messrs. R. G. Hatton and N. H. Grubb, of the East Malling Research Station, writing on leaf scorch in *The Journal of Pomology*, January 1925, p. 74, remark: "If one takes into account the nutritional aspect of leaf scorch, and the potash factor recently brought to light by Mr. Wallace, of Long Ashton, the high percentage of potash shown by most analyses of Apples is extremely significant." If, therefore, I am wrong in my reading of the Long Ashton results—which I do not admit—I am in very good company. *Market Grower.*

PUBLIC PARKS AND GARDENS.

In view of the decision of Edinburgh Town Council regarding expenditure on the city parks, proposed by the Parks Committee, to the effect that the estimates be referred back with a view to reduction, the sub-committee of the Parks Committee in charge of the subject has agreed to recommend a reduction of several items, estimated to cost £4,785. The revised estimate is £1,586. The question of a proposed new bandstand in West Prince Street gardens, to cost £1,500 remains for further consideration. The items objected to were mainly the erection of pavilions, &c. After receiving a report from the Superintendent of Parks the sub-committee has agreed to recommend to the Council that a request for the use of the Meadows for the Edinburgh Agricultural Association's show on June 13 be not granted.

In the course of a lecture delivered at Paisley on Wednesday, the 18th inst., Mr. I. M. Fleming, Superintendent of Parks, stated that nearly one tenth of the total acreage of Paisley was devoted to public parks or amusement places, the total area of the public places amounting to fully three hundred acres in a total municipal area of 3,500 acres. Mr. Fleming also directed attention to the Fountain Gardens, in which there was a statue of Burns, supposed to be the finest in Britain, if not the whole world.

Clacton Urban District Council has received sanction from the Ministry of Health to borrow £4,000 for laying-out the gardens on the sea front.

The Parks Committee has recommended the Hull Corporation to purchase seven acres of land to the north of East Park, at an estimated cost of £1,500, for the extension of the park.

The Town Council of Oxford has decided to purchase Alexandra Courts, at a cost of £2,800, for a recreation ground

SOCIETIES.

IPSWICH AND DISTRICT GARDENERS'.

The annual visit of Mr. F. J. Chittenden, V.M.H., Director of the R.H.S. gardens at Wisley, to Ipswich to lecture to the Ipswich and District Gardeners' Association is always looked forward to with great pleasure by the members. On March 19, Mr. Chittenden gave a lecture on "Experiments with Fruit Trees." The chair was taken by the President, Mr. W. Bradbury, supported by the Hon. Secretary, Mr. M. Ball.

Experiments now being carried out at East Malling were dealt with, especial reference being made to the need for uniform fruit stocks to meet the requirements of fruit-growers in this country. Great progress is being made in this direction. The Wisley pruning experiments, commencing so far back as 1912, were described by the lecturer. During the course of the lecture mention was made of the interesting experiments that have been carried out on the Duke of Bedford's fruit farm at Ridgmont. The question of pollen was then dealt with, and Mr. Chittenden pointed out that cross fertilisation has a great influence on the fruit crop, especially in the case of Apples and Pears.

A lengthy discussion took place, after which Mr. Chittenden was heartily thanked for his most able and interesting lecture.

BRITISH CARNATION.

March 26.—Despite some gloomy forecasts and recitations of the devastating work of a fell disease, there was a fair quantity of first-rate Carnations at the annual show of the above society, and, with the aid of some miscellaneous exhibits left over from the R.H.S. fortnightly meeting, the hall at Vincent Square was filled with flowers. While the general quality of the blooms was quite good, the same cannot be said of the competition, as in only a few classes were there more than two exhibitors, and in the respective sections it was generally the same pair of competitors. We believe there were several special prizes offered in the various sections or groups of classes, but within an hour or thereabouts of closing time apparently only one—the Silver-gilt Medal for the best vase in classes ten to sixteen—had been awarded.

Awards of Merit.

Cameron.—In many respects this new variety may be described as being a Mary Allwood of larger size and deeper tone of colour, for it possesses the good, compact, fully-double shape of that excellent Carnation, and is somewhat akin to it in colouring. The raisers describe it as being a shade of Rose Doré. It appears to be very free-flowering, and is of delightful fragrance. Shown by Messrs. Allwood Bros.

Marchioness of Salisbury.—For general usefulness this was the best novelty at the show. The six excellent plants which accompanied the vase of cut flowers showed that, in addition to its great value for cut-flower purposes, the variety made splendid pot plants. It is exceedingly free-flowering, and, while of dwarf habit, the stout flower stems are sufficiently long for any purpose. The lovely shade of pale salmon-pink is reminiscent of Enchantress at its best, but with more body and glow, and the blooms are pleasantly perfumed, large and fully double. Shown by the Marquis of Salisbury (gr. Mr. R. H. Hall), Hatfield.

Shot Silk (Fig. 100).—This brilliant, fancy Carnation has been admired by many visitors to the R.H.S. meetings during past months. The large, fully-double flowers are evenly fringed and richly perfumed. The elusive colouring may, perhaps, be described as bright Indian-red, flaked and rayed with deep, salmon-red, though from a little distance the colour effect is that of rich, cardinal-crimson. Shown by Messrs. ALLWOOD BROS.

Master Michael Stoop.—This variety has the largest flowers of the four novelties, but they are not quite so fully double as the others; there was a suggestion of "guard petals." But as a showy, Cherry-red Carnation for cut-flower purposes it has much to recommend it. The habit of the plants is quite good, and the stout flower stems are sufficiently long. It is said to be an all-the-year-round variety. Shown by Messrs. ALLWOOD BROS.

OPEN CLASSES.

The first prize for seven vases of Carnations (twenty-five blooms of distinct varieties) was won by Mr. C. ENGELMANN, chiefly for his superior arrangement. Mr. W. H. PAGE, who was second, also showed good blooms, but his arrangement was very faulty. The principal varieties were Canada, Mrs. Hamilton Fellowes, Laddie, Cupid, Donald Page, Mary Allwood, and John Page.

Mr. C. ENGELMANN was also first with three vases each of British and of American novelties, and with a vase of not fewer than one hundred blooms of one variety. His British varieties were Gorleth, Topsy, and Tarzan, while Donald was the best of the American sorts. Nigger was his variety in the one hundred blooms class, and here Mr. W. H. PAGE was a good second with Edward Page. Showing Cupid, John Page, and Topsy of good quality, Mr. W. H. PAGE was first with fifty blooms in three or more varieties.

With splendid blooms of Tess, Mr. GEORGE WEST won the first prize in the large class for twenty-five blooms of a British-raised Carnation. The Monro Silver Cup, offered for the best twenty-five blooms of a crimson variety was won by Mr. W. H. PAGE with Topsy, and he was also first in the interesting class for two boxes of thirty-six blooms, in two varieties, packed for market. Mr. C. ENGELMANN, who was second, was first with three vases of twenty-five blooms each, showing White Pearl, Improved Ward, and Laddie.

White Enchantress was the best white; Master Michael Stoop the best deep pink; and Laddie the best salmon-pink variety. These were shown by Messrs. ALLWOOD BROS. Spectrum, shown by Mr. C. ENGELMANN, was the best red. Mr. H. T. MASON was first in the class for twelve blooms of a crimson variety selected from list E., and with Maine Sunshine Mr. C. ENGELMANN was first with varieties from lists F., G., and H., and with Chintz Messrs. ALLWOOD BROS. were similarly successful in the next class. The Silver-gilt Medal for the best vase in Classes 10 to 16 was awarded to Spectrum, shown by Mr. C. ENGELMANN.

The first prize, offered by Mr. W. H. PAGE for a vase of twenty-five blooms of Carnations of Apricot and yellow shades was won by Mr. C. ENGELMANN with a tasteful arrangement of good flowers.

AMATEURS' CLASSES.

Although there was only one semi-circular group of Carnation plants in flower, this was of such good quality that any other competitor would have found difficulty in winning the first prize, which was awarded to Sir CHARLES NALL-CAIN, Bart., (gr. Mr. T. Pateman), Brocket Hall, Hatfield. The principal varieties were Lady Northcliffe, Mikado, Triumph, and Topsy.

The best decorative arrangement on a table space was also a first-class exhibit, and Sir RANDOLF BAKER, Bart. (gr. Mr. A. E. Usher), Ranston, Blandford, was deservedly awarded the first prize. His varieties included lovely blooms of Marian Willson, Tarzan, Mrs. H. Fellowes, Topsy, and Circe. Major H. W. LYNCH (gr. Mr. A. Swann), Haywards Heath, was second.

Sir RANDOLF BAKER also had the best dinner table decoration, the association of pink Carnations with green sprays of Asparagus plumosus vars. was especially successful. Mrs. A. SWANN, Colwood Lodge, Haywards Heath, who used Wivelsfield Apricot very effectively, was a good second, and Mrs. A. ROBINSON, Maidenhead, was third. The best decorative bowl of Carnations was also shown by Sir RANDOLF BAKER.

In the Senior Amateur section Sir RANDOLF BAKER won nearly all the first prizes with excellent blooms. LADY MOND, D.B.E. (gr. Mr. F. Clipstone), Melchet Court, Romsey, was first with an excellent exhibit of British-raised seedlings, and Sir CHARLES NALL-CAIN, Bart., was first with a vase of crimson Carnations.

In section C, the principal first-prize winners were Mr. WALTER HYDE, Sunbury, and Mr. ERNEST WALKER, Radcliffe-on-Trent, both of whom showed highly-creditable blooms.

READING AND DISTRICT GARDENERS'.

THERE was a good attendance of members, presided over by Mr. A. W. Gower, at the fortnightly meeting held in the Abbey Hall on Monday, March 23, to hear a lecture on one of the most interesting and fascinating subjects in horticulture, namely, "Flowering Trees and Shrubs," by Mr. W. A. Cook, Roseville, Shinfield, formerly head gardener at Leonardslea, Horsham. In his opening remarks he said there was hardly anything in the garden which gave a more charming and beautiful effect than a fine collection of flowering shrubs. Then followed cultural details of the various kinds, great stress being laid on position, soil preparation, shade, manures, propagation, and especially watering, the lecturer observing that more shrubs were killed by drought than by frost. In conclusion, he gave a list of the most suitable shrubs for various purposes, interspersed with interesting remarks on their chief features.

In the discussion which followed Messrs. Gower, Evans, Townsend, Reed, Cook, Howlett, Carter, and Smart took part. The lecturer showed many kinds and varieties of shrubs in flower, such as Rhododendrons, Ericas, Olearia, Azalea, Prostanthera, Osmanthus, Coronilla, Cytisus, Ceanothus, etc.

In the competition for three vases of flowers, three distinct kinds, the first prize was gained by Mr. F. TOWNSEND, The Gardens, Hillside, Reading (Cineraria, Narcissi, and Primula malacoides), and the second by Mr. A. H. FULKER, The Gardens, Elmhurst, Reading (Cineraria, Narcissi, and Hyacinths). In the non-competitive section a First-Class Certificate was awarded to Mr. H. WADE, The Gardens, Abbotsfield, Goring Heath, for three very fine Amaryllis, and an Award of Merit to Mr. C. J. HOWLETT, The Mews, Earley, for several varieties of Apples, all in excellent condition, especially Cox's Pomona, which is really an October variety.

KILMARNOCK SPRING BULB SHOW.

THE first of the spring flower shows in Scotland was held in Kilmarnock on Saturday, the 28th ult., under the auspices of the Horticultural Section of the Elmfield and Kennedy Welfare Association. There were thirty-two classes for Hyacinths, Daffodils, and Tulips, and competition was keen, especially in the section for long trumpet Daffodils, which attracted sixteen competitors in one class, and as an indication of the progress made since the exhibition was inaugurated three years ago, it may be stated that the total entries numbered 407 against 201 last year. The blooms generally were of a high standard of excellence and reflected great credit on the amateur growers both in the open and confined classes. The judges were Mr. J. Montgomery Crawford, Daffodil specialist, Barassie, and M. Alex. Smith, West Killink.

In the open section Mr. J. COCHRANE was awarded the first prize for red and blue Hyacinths with Rio des Belges and King of the Blues, and he repeated his success with Yellow Hammer in the yellow or primrose class. Mr. J. BOYD had also a triple victory in the Hyacinth section, and was represented by Corregio, white; Grand Maitre, blue, and La Innocence.

The principal prize winners in the Daffodil classes were Messrs. J. CRAIG, H. SMITH, J DODDS, J. BOYD, W. ORR, and J. COCHRANE, with outstanding blooms of Van Waveren's Giant, Madame de Graaf, Weardale Perfection, Sir Watkin, Lucifer, Albatross, White Lady, Glory of Lisse, King Alfred, and Will Scarlet, but some of the finest of the large trumpet sorts were disqualified owing to the pots exceeding the specified size. The dwarf flowering bulb class was composed entirely of Muscari Heavenly Blue, and here Mr. J. BOYD excelled, while Mr. W. ORR was placed first for Alpines with Saxifraga Clibranii.

Mr. C. BARCLAY was the most successful competitor in the confined section, and having the highest number of points in the Daffodil classes, he secured the Crawford Challenge Cup, and the cup for Hyacinths was also won by the same exhibitor. His outstanding varieties were Madame de Graaf, Lucifer, Glitters, White Lady, Glory of Lisse, King Alfred and Sir Watkin. Other prominent winners were: Messrs. A. ORR, J. GILMOUR and J. DODDS.

Special prizes were won by Mr. A. ORR for Hyacinth Gertrude, by Mr. C. ROXBURGH for Tulip Prince of Austria, and by Mr. A. ORR for Daffodil White Lady. In the open classes, Mr. J. BOYD excelled with Hyacinth Grand Maitre, Mr. C. ROXBURGH with Murillo Tulips, and Mr. W. ORR with Daffodil Van Waveren's Giant.

Trade exhibits were an interesting feature of the show. Messrs. AUSTIN AND MCASLAN, Glasgow, were represented by a choice collection of rock plants, comprising Primulas in variety, Saxifrages, Veronicas, Aubrietias, and Morisia hypogae, all of which were shown to advantage against the background of Prunus and hardy Ferns. A pretty table of Daffodils was provided by Mr. J. MONTGOMERY CRAWFORD, Highfield, Barassie. Of the thirty-six vases, the following varieties attracted attention:—Red Beacon, Goldfinder, Mimi, Lucifer, Sunrise, Leander, W. P. Milner, King Alfred, and Fair Maiden. An attractive colour display was made by the SCOTTISH WHOLESALE CO-OPERATIVE SOCIETY, West Kildare, who staged a numerous collection of flowering plants, consisting of Ericas, Cyclamens, Azaleas, Genistas, Tree Paeonies, Hydrangeas, Rhododendrons, and Hyacinths.

Obituary.

Mr. Alexander Burns.—A prominent figure in florists' circles in Aberdeen has been removed by the death, which took place at his residence, Victoria Road, Aberdeen, on Tuesday, March 24, of Mr. Alexander Burns. A native of Glasgow, Mr. Burns, as a child, was taken to India by his parents, his father being in the service of the East India Company. The family, during the memorable crisis in Indian history, the Mutiny, were in the vicinity of Lucknow during the siege. On returning from India to this country about 1860, the family settled in Aberdeen, where the father commenced business as a florist and fruiterer, and in course of time the son became his chief assistant and, ultimately, head of the firm. Mr. Burns was the oldest florist and fruiterer in the city, and was for long regarded as the "Father" of the trade. He was for many years a director of the Royal Horticultural Society of Aberdeen, the Aberdeen Chrysanthemum Society, and the North of Scotland Horticultural Association before it was absorbed by the first-named society, in all of which he took a very warm and intelligent interest as councillor and exhibitor. Time and time again his name may be found in past issues of *The Gardeners' Chronicle* as the victor in many a severe contest at the annual shows of these societies. In the formation of floral designs, baskets of flowers, bouquets, sprays and button-holes he had few compeers in his day. He brought to bear upon his floral work the fine qualities of lightness and exquisite taste. He strongly believed in the principle of allowing every individual bloom to stand well out, thus showing to the spectator its every quality of beauty, colour, and formation. Well over the allotted span of life, Mr. Burns, as he advanced in years, ceased to take the same active interest in the affairs of his favourite societies, feeling that the time had come when he should give the younger men a chance. His advice, however, on all matters pertaining to the profession was always willingly given to those who sought his aid. He is survived by his widow and a grown-up family, one of the sons carrying on the business.

TRADE NOTES.

Messrs. Barr and Sons inform us that the new strain of Lachenalias exhibited by them at the Royal Horticultural Society's show on February 24 under the name of Excelsior Hybrids, and which was given an Award of Merit, will henceforth be known as Whitewell Hybrids. They were originally raised by the Rev. Joseph Jacob, but had been grown for several years in Guernsey by Mr. W. Mauger.

The Canadian Destructive Insect and Pest Acts Advisory Board states that it has been brought to the notice of the Board by both the Customs and Post Office Departments that shippers of nursery stock from countries other than the United States are not complying with the regulations dealing with the forwarding of parcel post shipments.

Section X of Regulation 1 (Foreign) distinctly states that all such shipments must have an official label, furnished by this Board, attached to the package. No other label should appear thereon, but the shipper is advised to place a label inside the package giving the name and address of the ultimate consignee.

Packages with two labels are frequently forwarded direct to their destination, and then have to be returned to either Montreal or Vancouver for inspection, in which case the importer is required to pay the cost of postage both ways.

Importers are advised to notify their shippers in accordance with the above.

NEW HORTICULTURAL INVENTIONS.

Latest Patent Applications..

5655. Cowburn, F. C. Lawn mowers. March 2
5645. Dimmock, L.—Seed box for growing plants. March 2.
5399.—Bickerton, S.—Potato digging and sorting machines. February 27.
5601. Conder, J. S. Garden frames, etc. February 28.
5103. Cowburn, T. Ground-piercing device for aerating lawns, etc. February 24.
5434. Crombie, W. A. E.—Appliance for sowing seeds. February 27.

Specifications Published Last Month.

219,645. Deutsche Werke Akt-Ges.—Sowing appliance for depositing seeds singly.
214,259. Deutsche Werke Akt-Ges.—Sowing appliance for depositing seeds singly.

This list is specially compiled for *The Gardeners' Chronicle*, by Messrs. Rayner and Co., Regd., Patent Agents, of 5, Chancery Lane, London, from whom all information relating to Patents, Trade Marks, and Designs, can be obtained gratuitously.

ANSWERS TO CORRESPONDENTS.

Lily of the Valley in Bombay: *R. F. S.* We do not expect you will be successful with Lily of the Valley in Bombay as the temperature will range too high for it unless you happen to have a particularly elevated situation where the climate is temperate. Unless Lily of the Valley has a long season of rest it is not likely to flower successfully. We very much doubt whether any method of artificial resting would produce good results in producing flowers of Lily of the Valley in your climate

Names of Plants: *F. E.* 1, Sphagnum cymbifolium; 2, Dicranum scoparium var. paludosum; 3, Sphagnum cymbifolium; 4, Scapania undulata (Hepatic); 5, Dicranum scoparium; 6, Hypnum Schreberi; 7, Plagiothecium undulata; 8, Hylocomium loreum; 9, Thuidium tamariscinum; 10, Pellia epiphylla (Hepatic); 11 and 12, Sphagnum cymbifolium; 13, Polytrichum formosum; 14, Pterygophyllum lucens; 15, Hylocomium triquetrum; 16, Dicranum scoparium var. paludosum; 17, Mnium punctatum; 18, Hyocomium flagellare.

Peach Tree attacked by Silver Leaf: *S. R. G.* The Peach shoots sent for examination are, as you suspect, suffering from an attack of Silver leaf disease which is due to the presence of a fungus known as Stereum purpureum. Diseased branches should be cut back to a point where the wood shows no trace of the dark colouring which occurs in the diseased portion. Burn all the affected parts and cover the wounds with tar or styptic to prevent further infection. If, however, the leaves of all the branches are attacked, the tree should be removed and burnt, great care being taken to remove every portion of root from the soil.

Pelargonium Leaves Damaged: *R. W.* We could find no trace of parasitic fungi on the Pelargonium leaves you sent us. There are, however, numerous punctures on some of the leaves which suggest that some insect or small beetle may be the cause of the trouble. A slightly scorched appearance along the edges of the leaves suggests that heavy fumigation, or fumigation while the foliage was wet, is responsible for some of the trouble.

Pruning Newly-planted Euonymus: *J. F. D.* It will certainly be desirable to shorten the branches at once to compensate in some degree for the loss of roots. The best time to do such work is before commencing to move the plants as it reduces the difficulties of transplantation. We should feel inclined to reduce the shoots to five feet and allow the bushes to make new growth up to the height required. At six feet you will only be reducing some of the branches one foot, as you state they are seven feet to eight feet high.

Propagation of Begonia Gloire de Lorraine: *H. M. P.* This popular winter-flowering Begonia is easily propagated, either by means of leaf or ordinary cuttings. Although some cultivators contend that leaf cuttings give the best results, after many years experience we cannot say that there is any advantage in leaf cuttings over ordinary cuttings. If ordinary cuttings are used, it is very important that the right type of shoots are used; they should always be selected from the young growths that are thrown up from the base of the plant. To obtain the right kind of cuttings the stock plants should be partly cut down early in the New Year and placed in a moist house with a temperature of 60° to 65°; young shoots will soon develop from the base of the plants and when they are about three inches in length they should be secured as cuttings, dibbling them into pots of light, sandy soil. Place them in a close propagating case, with bottom heat, and they will root readily; cuttings taken from the stems of the old plants, although they root readily, generally persist in producing flowers, and do not readily make fresh growth from the base. If desired, healthy, full-grown leaves may be used for propagating purposes: buds will develop from the base of the leaf. Insert the leaves in a bed of fibre, or fibre and sand mixed, in a warm, moist house, with bottom heat at command. They will root readily in an open bed, in fact, if put in a close case the leaves often damp off. By this method it naturally takes longer to produce a plant, therefore, if good cuttings can be procured they offer the quickest means of raising stock. If stock plants are limited, leaves provide an additional means of raising a large number of plants.

Shrubs for Elevated Garden: *F. E.* In the elevated garden of the district you name, the influence of wind is more to be feared than actual frost, so that small-leaved shrubs would withstand its effects better than large-leaved ones. The period of young growth is more critical than when the leaves are mature. Evergreens we would recommend are Berberis Darwinii, B. stenophylla, Daphne pontica (yellow-green, very fragrant flowers), Olearia Haastii, Cotoneaster microphylla, and Ilex Aquifolium Silver Queen. Deciduous shrubs of great hardiness are Ribes sanguineum, Spiraea japonica Anthony Waterer, Cotoneaster Simonsii (berries), Potentilla fruticosa, Forsythia suspensa, and Cytisus albus (Portugal Broom).

Soil for Ericaceous Plants: *G. L. W.* We do not undertake the analysis of soil for our readers. The sample you sent contains a considerable amount of sand, and appears to be a very favourable medium for the growing of such plants as you mention, provided a liberal quantity of peat or well-rotted leaf-mould is mixed with it. You could make stations for the plants and place the peat or leaf-mould in the holes so that the roots are growing in these materials. A good idea as to whether Heaths, etc., are likely to succeed in your district may be obtained by observing the behaviour of Ericas or Rhododendrons in the neighbourhood.

Weevils attacking Maidenhair Ferns: *J. H. M.* The beetles sent are those of the Vine Weevil, Otiorhynchus sulcatus They are well-known pests in vineries and attack other plants as well, causing great great damage to the roots. The beetles may be killed by spraying with lead arsenate or by hand picking at night The best remedy for the eradication of the grubs at the roots of pot plants is injections of carbon disulphide. Make two or three holes with a piece of stiff wire and pour a teaspoonful of carbon bisulphide in each hole. This chemical is very inflammable.

Wistaria multijuga: *A. R.* Wistarias are of easy cultivation, thriving in most soils which are well drained and have been deeply dug and manured. In a young state Wistarias are relatively slow in growth, but after the first few years, when well established, they make rapid growth. To give them a good start prepare a station of fibrous loam, mixing in some old mortar rubble or coarse grit to keep it porous. A sunny position is essential. Select the best long, slender growths to clothe the space desired, removing the thin ends. Shorten all new shoots not required to within an inch or two of the older wood.

Communications Received.—K. H. M.—M. M.—J. P.—J. F.—W. Y.—F. W. K.—A. S., Toronto.—A. P.—W. S.—X. Y. Z.—C. S. C.—H. K.—J. F.—J. C.

MARKETS.

COVENT GARDEN, Tuesday, March 31st, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0-13 0
—elegans	10 0-12 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Azaleas, per doz.	15 0-36 0
Cacti, per tray,	
—12's, 15's	5 0- 7 0
Cinerarias, doz.	15 0-24 0
Crotons, per doz.	30 0-45 0
Cyclamen—	
—32's	36 0-48 0
—48's	24 0-30 0

	s. d. s. d.
Cyrtomium	10 0-15 0
Erica melanthera, 48's per doz.	21 0-30 0
— —60's, per doz.	8 0-10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0- 4 0
Marguerites, white, 48's per doz.	18 0-30 0
Nephrolepis, in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large 60's	5 0- 6 0
—small	4 0- 5 0
—72's, per tray of 15's	2 6- 3 6

Remarks.—Flowering plants are the most attractive line. The newest arrivals are a few Rambler Roses and Mignonette, and in addition to these are some fine Cinerarias, Cyclamens, Daffodils, various Genistas in fairly large quantities, Hyacinths, Margueritess, Primula obconica, White Spiraeas, and a few Rhododendrons. All Ferns and Palms in various sizes are now in greater demand.

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0-24 0
—cuneatum, per doz. bun.	12 0-15 0
Asparagus, plumosus, per bun.	
long trails, 6's	2 0- 3 0
med. sprays	1 6- 2 6
short „	0 9- 1 3
—Sprengeri, per bun.	
long sprays	1 6- 2 0
med. „	1 0- 1 6
short „	0 4- 1 0
Azalea, white, per doz. bun.	9 0-10 0
Bouvardia, white, per doz. bun.	12 0-15 0
Camellias, White, per box	3 6- 4 0
Carnations, per doz. blooms	3 6- 5 0
Croton leaves, var., doz. leaves	0 9- 2 6
Daffodils—	
—Emperor, per doz. bun.	10 0-12 0
—Golden Spur, per doz. bun.	3 0- 5 0
—King Alfred, per doz. bun.	10 0-12 0
—obvallaris, per doz. bun.	3 0- 5 0
—Sir Watkin, per doz. bun.	5 0- 6 0
Fern, French, per doz. bun.	0 9- 1 3
Freesia, white, per doz. bun.,	2 0- 3 0
Galax, American, green and bronze, per doz. bun.	— 3 0
Iris tingitana, per doz. spikes	5 0- 6 0
Lilac, Dutch, per spikes	4 0- 8 0
Lilium speciosum rubrum, long, per doz. blooms	4 0- 5 0
—short „ „	3 0- 4 0
Lilium longiflorum long, per doz.	7 0- 8 0
Lily-of-the-Valley, per doz. bun.	24 0-36 0
Narcissus—	
—Scilly White, per doz. bun.	3 0- 5 0
—ornatus, per doz. bun.	5 0-10 0
Orchids, per doz.	
—Cattleyas	24 0-30 0
—Cypripediums	5 0- 7 0
Primroses, per doz. bun.	1 6- 2 0
Prunus triloba (Dutch), per bun.	1 0- 1 6

	s. d. s. d.
Richardias (Arums) per doz.	9 0-10 0
Roses, per doz. blooms, Richmond	4 0- 7 0
—Liberty	5 0- 8 0
—Madame Butterfly	9 0-12 0
—Mme. Abel Chatenay	4 0- 6 0
—Melothy	— —
—Niphetos	4 0- 4 6
—Ophelia	10 0-12 0
—Sunburst	7 0- 2 0
Ruscus, French, per bun.	1 0- 2 0
Smilax, per doz. trails	3 0- 3 6
Sweet Peas, per doz. bun.	15 0-18 0
Tulips, per bunch—	
—Bartagon	1 6- 3 0
—Clara Butt	2 0- 3 0
—Couronne d'Or	2 0- 2 6
—La Reine	1 6- 2 0
—Prince of Austria	1 9- 2 0
—Wm. Copland	2 0- 2 6
—Farncombe Sanders	2 0- 3 0
—White Swan	2 0- 2 6
Violets, per doz. bun.	2 0- 4 0
French Flowers—	
Anemone, dble. pink, per doz.	3 6- 5 0
—De Caen, mixed, per doz.	6 0- 7 6
—single blue, per doz.	3 0- 4 0
Freesia, long, per pad	12 0-14 0
Marguerite, yellow, per pad	8 0-10 0
Marigolds, per pad	7 0-10 0
Narcissus—	
—Grand Primo, per doz. bun.	4 0- 5 0
Ranunculus, dble. scarlet, doz. bun.	8 0-10 0
—Carmine, per doz. bun.	8 0-12 0
Star (Allium), per pad, 48's	16 0-18 0
Stock, double white, per pad 24 bunches	8 0-10 0
—double coloured	8 0-10 0
Violets, Parma, per bun.	3 0- 3 6
—single, per pad	6 0- 8 0
Wallflowers, per pad	5 0- 8 0

Remarks.—The supplies from home growers have been slightly checked during the past week, but owing to the moderate demand prices have remained fairly normal. Up to this morning, there has been a very quiet country trade, but conditions should improve during the next few days, when large quantities of cut blooms will be required for the great festival in Wales on Palm Sunday. In consequence, many subjects may advance in price before Saturday next. Roses are one of the most improved items, and their prices are on the down grade; a much better selection of varieties is offered. Spanish Irises are also improved in quality and quantity. Special Daffodils, such as Emperor, King Alfred, and Victoria remain firm in price; small consignments of outdoor blooms are now arriving from home growers and the Channel Islands. Tulips are somewhat fewer in variety; Darwin sorts are receiving the most attention at the present time. Narcissus ornatus is arriving in good condition, although supplies have been reduced, but better supplies are anticipated for next week. There is also a limited supply of cut white Azalea. White Camellias should find a ready sale during the next few days. Amongst foliage, supplies of Asparagus plumosus, A. Sprengeri, and Maidenhair Fern have been below present requirements. Smilax is arriving in a soft condition generally.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Albermarle	45 0-55 0
—Oregon Newtown	14 0-17 6
—Bramley's Seedling	12 0-18 0
—Australasian—	
—Jonathan	18 0-21 0
—Cox's Orange Pippin	30 0-35 0
—Reinette du Canada	15 0-16 0
—Five Crown Pippin	18 0-20 0
Bananas, singles	16 0-25 0
—doubles	17 0-27 6
Grapes—	
—Belgian Colmar, per lb.	2 6- 4 0
Grapfs, South African—	
—White Hanepoot	5 0- 8 0
—Red Hanepoot	10 0-15 0
—Barbarossa	10 0-12 0
—Rosaki	9 0-12 0

	s. d. s. d.
Grape Fruit, Cuban	18 0-23 0
—Jamaica	18 0-20 0
—Florida	20 0-27 6
Lemons, Messina, per box	8 0-12 0
—Murcia	10 6-14 0
—Naples	16 0-20 0
Oranges, Jaffa	16 0-17 0
—Spanish—	
—300's	16 0-35 0
—360's	14 0-22 0
—504's	14 0-22 6
—Messina Blood	— 16 0
Pears, South African—	
—Beurre Bosc	4 0- 6 0
—Beurre Diel	4 0- 5 0
—Beurré Hardy	4 0- 6 0
—Louise Bonne of Jersey	4 0- 6 0
Pines	3 6- 5 0
South African Plums, Kelsey	5 0- 8 0
Strawberries, per lb.	10 0-20 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	2 0- 2 6
—Worthing	1 9- 2 6
—Madeira, per box	6 0- 9 0
Beets, per cwt.	5 0- 6 0
Cabbage, per tally	10 0-12 6
Canary Island Tomatos	18 0-20 0
Cauliflowers, per doz.	3 0- 5 0
Forced Mint, per doz.	4 0-10 0
Celery, best, washed, per bundle	1 6- 2 0
Chicory, per lb.	0 3½ 0 4
Carrots, per bun.	6 0- 8 0
—New	— —
Cucumbers, per doz.	5 0- 7 0
—Flats	16 0-20 0
Dutch Onions	11 6-12 6
Endive, per doz.	1 3- 3 0
Batavia, per doz.	3 0- 3 6
English Asparagus—	
—Best	6 0- 7 6
French Asparagus—	
—Cavamon	5 0- 5 6
—Paris Green	6 6- 7 6
—Lauris	4 0- 6 0
Greens, best, per bag	4 0- 6 0
Horseradish, per bundle	2 0- 2 6
Leeks, per doz. bundles	2 6- 3 6
Lettuce, per doz.	1 6- 3 0
—Cos	6 0- 8 0
—Outdoor	2 6- 3 0

	s. d. s. d.
Mushrooms, cups	3 0- 4 0
—broilers	3 0- 3 6
Onions, Valencia, per case	15 6-17 0
—English, per cwt.	12 6-14 0
Parsnips, per cwt.	4 0- 5 0
Peas, French, per cane	10 0-12 0
Peas, Guernsey, forced, per lb.	3 0- 4 0
Potatos, Canary Island, per case	8 0-12 0
—Spring crop	16 0-18 0
Potatos, per ton—	
—Dunbar	210 0-240 0
—King Edward	190 0-210 0
—White	90 0-160 0
—New Guernsey lb.	0 7- 0 9
Potatos, new—	
—Algerian, per lb.	0 2½-0 3
—Azores, per case	10 0-20 0
Radishes—	
—Guernsey round	1 6- 2 0
—Guernsey long	1 0- 1 6
—French Breakfast	2 0- 3 0
Rhubarb, Forced, per doz.	2 0- 2 9
—" Natural " per doz.	5 0- 7 0
Savoys, per tally	12 6-15 0
Seakale, per doz. punnets	18 0-24 0
Spinach, per bushel	5 0- 7 0
Sweet Potatos	— 3 0
Tomatos, English, per lb.	3 6- 4 0
Turnips, new, per doz. bun.	8 0-12 0
Turnip Tops, per bag	4 0 6 0

Remarks.—Many sections of the market continue to show a fair amount of activity for the time of year. Shipments of South African fruits are on a large scale, and consist mainly of Grapes, Pears and Kelsey Plums. Grapes are not a free business, but generally South African fruits have sold well. Trade in Apples is fairly good, consignments of Albemarle Newtown causing a small slackening in the demand for the fine fruits of English Bramley's Seedling that are being marketed in some quantity just now. English hothouse Grapes are practically finished, but some new season Grapes are expected shortly. Choice vegetables, such as forced Beans, Potatos, and Peas, are expected to be a good trade, certainly until the Easter holiday. Mushrooms are scarce and costly. Cucumbers have developed very rapidly, supplies from the Lea Valley and south coast having assumed considerable proportions. Home-grown Tomatos are yet scarce; a sprinkling is being sent from Worthing, and the first package from the Lea Valley arrived last week. New Potatos from the Canary Islands are a better trade; supplies from the Azores and Algeria are drawing to a close. Both natural and forced Rhubarb has sold very well and remains in good demand. Salads sell briskly. Green vegetables are a moderate trade. Trade in old Potatos is steady, supplies being equal to requirements.

GLASGOW.

As the result of colder weather in the past week, the prices of cut flowers improved, but the market was very slow until Friday. Tulips continued to be very plentiful. Bartagon averaged 1/4 for special 6's; Copland 9d. to 1/3; Prince of Austria, 8d. to 1/-; Tea Rose, 8d. to 10d.; Couronne d'Or, 10d. to 1/; Lucretia, 10d. to 1/2. No. 1 pink, 1/4; and Murillo, 6d. to 10d. A considerable portion of the Daffodil supplies now consist of outdoor-grown blooms, and this tends to cheapen prices. Good Golden Spur averaged 8d. to 10. per bunch; English, 3d. to 4d.; and Guernsey, 2½d. to 3½d.; Pheasant's Eye, 9d. to 10d.; and ornatus, 7d. to 10d. White Hyacinths realised 6d. to 8d. for three spikes. The last of the new Wedgewood Iris sold at 5/- to 6/- per doz., while other varieties made 3/- to 4/-. Local florists are receiving Ophelia, Madame A. Chatenay and Mme. Butterfly Roses direct from the growers, and the only blooms in the market were Richmond of variable quality, which were disposed of at from 2/- to 4/- per doz. Special Carnations were firmer at 5/-, and medium quality blooms ranged from 2/3 to 3/6 per doz. English Richardias (Arums) averaged 6/- to 8/-; Guernsey, 4/-; Wallflowers realised 1/9 to 3/-; Lily-of-the-Valley, 2/6 to 3/-; Parma Violets, 3/6 to 4/-; and Snowdrops, 6d. to 1/-.

The turnover in the fruit department continued satisfactory, and the tendency was again firm, without any material change in values. Very best Jaffa Oranges declined to 15/- and 17/- all counts, but Valencias maintained their advance at the following rates:—360, 15/- to 18/-; 300, 17/- to 24/-; 440, 23/- to 35/-; 240, 17/6 to 22/; and 206, 16/- to 20/-. Grape Fruit, extra, touched 27/-, and Puerto Rico fruit, 17/- to 19/-. Cape Pears, Peaches, Plums, and Grapes were in good demand at firm prices, the average of which was as follows:—Pears: Williams's Bon Chretien, 4/6 to 5/6 per box; Louise Bonne of Jersey, 5/- to 6/; Beurré Bosc, 5/6 to 6/6; Beurré Clairgeau, 4/9 to 5/6; Beurré Diel, 5/- to 5/6; and Beurré Hardy, 5/- to 6/-. Peaches: Elberta, 5/- to 6/-; Gladstone, 5/- to 7/-; and Freestone, 8/6 to 10/-. Grapes: White Hanepoot, 10/- to 12/6; red, 12/- to 24/-; and Hermitage, 10/- to 11/6. English Colmar Grapes fetched from 4/6 to 6/- per lb., and Belgian, 2/6 to 3/6. Apples were in short supply, and quotations ruled high. Albemarle Newtown (U.S.A.) fluctuated between 45/- and 60/- per barrel; Baldwin (U.S.A.), 33/- to 48/-; Baldwin (Nova Scotia), 26/- to 30/-; Ben Davis (U.S.A.), 27/- to 32/-; Oregon Newtown, 15/6 to 19/- per case; Winesap, 18/- to 23/-, and Golden Otley, 16/- to 19/-. Winter Nelis Pears, 16/- to 17/- ½ case.

The tone of the vegetable market was steady for most produce. Green Peas made 12/- per case; Asparagus, 5/- per bunch; Cauliflowers, 5/- to 5/6 per dozen; Cucumbers, 12/- to 15/-; Lettuce (French), 1/6 to 2/3 per dozen, (Dutch), 7/6 to 9/- per crate; Syboes, 5/- to 7/-; Madeira Beans, 5/- to 6/- per box; and Guernsey Beans, 1/9 to 2/- per lb. Rhubarb was cheaper at 38/- per cwt. for Polmont, and 32/- from other sources.

SCHEDULE RECEIVED.

Scottish National Sweet Pea, Rose and Carnation Society.—Exhibition to be held in Kelvin Hall, Glasgow, on Wednesday and Thursday, August 5 and 6.—Secretary, Mr. John Smellie, Westwood Cottage, Helensburgh.

GARDENING APPOINTMENTS.

Mr. J. Hickman, as Gardener to Brig.-Gen. The Hon. A. M. Henby, K.C.M.G., Watford Court, near Rugby, Northants.

Mr. W. E. Jones, for the past five-and-a-half years Gardener to John Barker, Esq., The Old School House, Shrewsbury, as Gardener to Mrs. R. Crafford Clarke, The Rocks, Meole Brace, Shrewsbury. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.).

Mr. C. Hobbs, for nearly three years Inside Foreman to Hugh Morrison, Esq., M.P., Fonthill House, Tisbury, Wiltshire, as Gardener to Col. Hugh L. de Spencely, Ashley House, Box, Wiltshire.

Mr. J. Perret, for nearly eighteen years Gardener to J. Goddard, Esq., at Tilgate Forest Cottage, Crawley, and previously at The Elms, Crawley, as Gardener to Capt. W. Johnsen, Balcombe House, Balcombe, Sussex.

Mr. J. A. Cane, previously Gardener to the Rt.-Hon. Lord Seaton, Nutwell Court, Lympstone, South Devon, as Gardener and Bailiff to Miss Fleming, Annery, near Bibeford, North Devon.

CATALOGUES RECEIVED.

J. Cheal and Sons, Ltd., Crawley.—Dahlias.

Clarence Elliott, Ltd., Six Hills Nursery, Stevenage.—Bedding plants, alpines, and herbaceous plants.

Hunter and Gow, Ltd., 36-46, Thomas Street, Liverpool.—Sundries.

J. Carter, Co., Raynes Park.—Kil-Jac for destroying Leather Jackets.

Foreign.

Vilmorin-Andrieux et Cie., 4, Quai de la Megisserie, Paris.—Plants.

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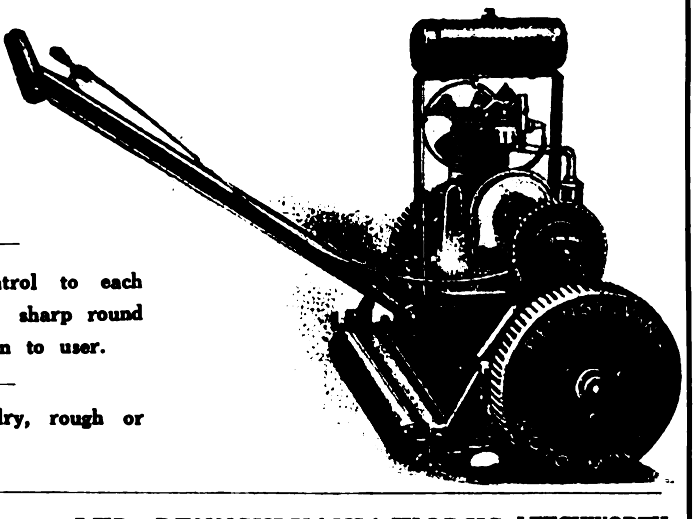

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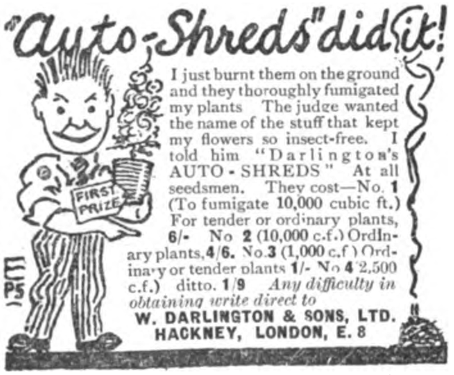

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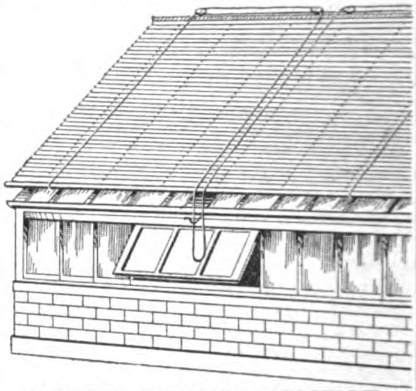

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THE
Gardeners' Chronicle
No. 1998.—*SATURDAY, APRIL* 11, 1925.

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Average Mean Temperature for the ensuing week deduced from observotions during the last fifty years at Greenwich, 47.1°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Tuesday, April 7, 10 a.m. Bar. 29·8, temp. 49° Weather, Foggy.

A Botanical Survey of the Empire. The most important and fruitful subject dealt with at the recent Imperial Botanical Congress was the promotion of a complete botanical survey of the different parts of the Empire. The subject was introduced by Dr. Hill, who deplored the fact that few among our younger botanists were carrying on the fine tradition of botanical exploration handed down by a long line of distinguished British botanists. As a consequence, for a Briton to learn of the vegetation of Australia, he must needs read the accounts of American, German, or Czecho-Slovakian botanists; if he desires to know fully the botany of our own West Indian Islands the student must turn to American sources; and should he want to acquire recent information on the botany of the Falklands and Antarctic Islands he must consult the work of a Swedish botanist. It is true that in many parts of the Empire, India, Ceylon, the Union of South Africa, New Zealand, and other parts of the Empire, scientists have made, and are still making, notable contributions to botanical knowledge, but the fact remains that "the harvest is great but the labourers are few." By no means all the blame for this state of affairs rests with the botanists themselves, albeit some does. The spirit of adventure, if imperious enough, might drive the young botanist enthusiastic for exploration to find means—as it drove Wallace and Bates—to pursue their avocation. That restless spirit seems to have been subdued in these days, or if not subdued to have taken forms other than the desire "for to see and to behold." The major part of the blame for this neglect to catalogue and describe the chief possessions of the Empire must be laid upon our rulers. In their great and numerous preoccupations there is never time to consider fundamental far-off things, and although to our knowledge one recent Colonial Secretary was fully alive to the importance of a botanical survey of the Empire nothing came of it. Nor will anything ever come of the project unless the aspirations expressed by the recent Botanical Conference are supported vigorously by botanists within the Empire. As Dr. Hill pointed out, a complete botanical survey of the Empire is a work which must extend over many years, and include not only the systematics of plants but also enquiry into, and investigation of, their economic importance. If the survey is to be made on systematic lines it will be necessary no longer to rely on the voluntary labour of private individuals, by which so much of our existing knowledge of floras has been acquired, but on adequately-trained botanists, for the information required for a proper survey needs to be both extensive and precise. This method was employed by Germany before the war in her East African colonies and in the Cameroons. Fortunately, not a few parts of the Empire are keenly alive to the importance of this work, and in not a few cases have taken steps to promote it. It must not be supposed that because the comprehensive survey which is so much to be desired has not been undertaken as a whole, that nothing or little has been done to collect, describe, and make known the botanical resources of the Empire. On the contrary, much has been done and there are but few parts of the Empire, floras of which are not in existence. In this work, Kew has, as is right and proper, played a leading and stimulating part, and there can be no doubt but that if ever the comprehensive survey be undertaken it should be inspired and directed from Kew, save, of course, in those parts of the Empire which have the trained staff to do it themselves. For example, as Dr. Pole Evans observed at the Conference, the Union of South Africa has been engaged in a botanical survey for the past six years. General Botha, a keen agriculturist, instituted it, and General Smuts, an enthusiastic botanist, who keeps abreast of all branches of botanical discovery, fostered it. Thanks to the South African botanists, Bolus, Bews, Marloth, Schenland, and others, the survey is making good progress. New Zealand botanists also have made remarkable contributions to the survey of their islands, and their work serves as a model to other countries of how it should be done. India also has done magnificently; but, as Dr. Pole Evans points out, when we consider the enterprise shown by America in botanical exploration we cannot fail to realise, whilst being agreeably aware of the extent of our own efforts, that we are leaving undone many botanical things that ought to be done; and that should stimulate us to do them.

Lord Lambourne.—We very much regret to learn that Lord Lambourne is seriously ill with influenza and bronchitis, and was unable to be present at the Royal Horticultural Society's meeting on Tuesday last. Our readers will join with us in wishing Lord Lambourne, who is in his 78th year, a speedy recovery from his indisposition.

A National Pinetum.—In a discussion following a paper on "Modern Atmospheric Conditions" delivered before the Royal Society of Arts by Dr. J. S. Owens, Superintendent of the Advisory Committee on Atmospheric Pollution, Air Ministry, Meteorological Office, Dr. Arthur W. Hill, Director of the Royal Botanic Gardens, Kew, stated that the effect of the sooty deposit on Conifers at Kew was so bad that the Forestry Commission had given an area of land at Bedgebury, near Tunbridge Wells, for the purpose of forming a national collection of Conifers, where the trees would be comparatively free from the effects of the London smoke.

Wolverhampton Floral Fête.—The thirty-third Wolverhampton Floral Fête will be held in the West Park, Wolverhampton, on Tuesday, Wednesday, and Thursday, July 14th, 15th, and 16th, when silver cups, gold, silver and bronze medals, and cash prizes to the value of over a £1,000 will be offered for competition. The schedule, now ready, contains eighty-six classes covering a wide range of horticultural subjects. The principal class is for a display of miscellaneous plants and flowers grouped for effect on a space not to exceed twenty-five feet by twelve feet, and the prizes offered are £40, £30, £20, and £10 respectively, making a total of a £100 for this class alone. For a group of plants not in flower the first prize is £20, while for fifteen specimen plants the awards are £10 10s. 0d., £7, and £4 respectively. Two other important classes are those for a group of tuberous-rooted and fibrous-rooted Begonias, and for a collection of cut Roses. In the latter class the flowers must be arranged on a space of twenty-four feet by four feet, height practically unlimited, and the prizes offered are £20, £12, £8, and £4 respectively. Such popular subjects as Carnations, Antirrhinums, Lupins, Delphiniums, and Sweet Peas are catered for and liberal prizes are offered, while there is a considerable number of classes provided for vegetables, with other sections for cottagers and allotment holders and for floral decorations. In connection with the Silver Challenge Cup, valued at fifty guineas, offered for the best non-competitive exhibit, it is interesting to notice that this trophy becomes the property of any competitor who wins it three times in succession or four times in all. Messrs. Baker's of Wolverhampton won it in 1923 and in 1924, and are the only firm who has won it twice since it was first competed for in 1910.

Colour Planning of the Garden.—H.R.H. Princess Louise, Duchess of Argyll, has presented the Women's Farm and Garden Association with a copy of *Colour Planning of the Garden*, by Mr. George Tinley, Associate Editor of *The Gardeners' Chronicle*, Mr. Thomas Humphreys, Curator of the Birmingham Botanic Gardens, and Mr. Walter Irving, Assistant Curator of the Botanic Gardens, Kew. The Princess has inserted a note on the fly-leaf to the effect that the gift is from herself as President of the Association. This work is a welcome addition to the Association's lending library.

Canadian Horticultural Council's Gold Medal Award for 1924.—A Toronto correspondent informs us that Mr. Archibald Gilchrist, Runnymede Road, Toronto, Ontario, Canada, has been awarded the Canadian Horticultural Council's Gold Medal for the best production for 1924. This is Gladiolus Lady Byng, a hybrid of G. primulinus and G. America. It is decidedly graceful in appearance and of a delicate and most refined shade of shell-pink. The arrangement of the flowers on the stem is good, and the blooms are without the hooded character of the strict primulinus type. It is stated that the beauty and elegance of the individual blooms of this variety cannot be excelled. Gladiolus Lady Byng is very vigorous, growing about four feet high, with five or six blooms open at one time. It is early in growth and will bloom in about sixty to seventy days from the date of planting. It is a wonderful forcer and is unsurpassed in quality. Mr. Gilchrist has spent the last ten years of his life hybridizing Gladioli, with great success, and has won five Gold, and thirteen Silver and Bronze Medals for these flowers.

A World's Forestry Congress in 1926.—By agreement between the International Institute of Agriculture and the Italian Government a committee has been established for organising a World's Forestry Congress to take place in Rome early in May, 1926. The headquarters of this committee are at the International Institute of Agriculture in Rome, and the committee is composed as follows:—President, Prof. Arrigo Serpieri, Director of the Royal Higher Institute of Agriculture and Forestry at Florence, member of the Italian Government; vice-presidents, M. Anders Fjelstad, Delegate of Norway at the International Institute of Agriculture, and Dr. Alessandro Stella, Director-General of Forests and State Lands at the Italian Ministry of National Economy; secretary, Signor Ariberto Merendi, Chief Inspector of Forests at the Ministry of National Economy; M. Deoclecio de Campos, Delegate of Brazil at the International Institute of Agriculture; Signor Gian Francesco Guerrazzi, Delegate of Italian Somaliland at the Institute; and Prof. Asher Hobson, Delegate of the United States of America at the Institute. The Congress will bring together experts in forestry and the timber and allied industries from all parts of the world, and it is hoped that valuable and profitable results will be reached through the exhaustive discussions which are expected to take place on all those problems of forestry which are of really national importance. At the same time, in connection with the International Fair at Milan, there will be held an important exhibition of forest products and the machinery used in their conversion, which will enable visitors to examine the different products of the wood-manufacturing industries and the wood-working machines made in the various countries, and should serve to increase the flow of international trade in this important branch of commercial activity. Various excursions to the more typical forest lands in Italy, and possibly in other countries, will be arranged to follow the work of the Congress.

Summer Time. — Summer time in this country will begin this year at 2 o'clock, Greenwich mean time, on the morning of Sunday, April 19. Summer time in France and Belgium began on Saturday - Sunday, April 4 and 5.

Elgin Horticultural Society.—A very successful meeting of this Society was held in Gordon's Temperance Hotel, Elgin, when Mr. R. S. Halley was the lecturer. Councillor T. L. Mann presided. Choosing as his subject "Small Fruits in a Garden," Mr. Halley described with great lucidity the best methods of cultivating Strawberries, Raspberries, Gooseberries, and Black Currants. These fruits, he declared, were comparatively easy to grow, and the crops more certain than in the case of larger fruits, notwithstanding attacks of Gooseberry Maggot, American Mildew, and Big Bud. Strawberries were the most popular of all small fruits, and they were least liable to disease. The best paying fruit was, of course, the Black Currant, even when the ravages of the Big Bud were taken into account. Mr. Halley proceeded to explain in a most interesting way the most approved modern methods of growing the fruits named so that larger and better crops might be obtainable. Appreciative remarks were made by several members on the interesting way in which Mr. Halley treated his subject, and the proceedings closed with a very hearty vote of thanks to that gentleman.

Mr. Charles E. Pearson, V.M.H.—Very many horticulturists will have learned with great pleasure of Mr. Chas. E. Pearson's restoration to health, while others have already congratulated him upon his recovery and his return to business. He is one of the brothers who form the firm of Messrs. J. R. Pearson and Sons, Lowdham, Nottingham, and at the early age of nineteen years, owing to the death of his father, he became manager of the glass department at Chilwell, where the nurseries were situated. For many years he conducted his department with zeal and ability, raising Pelargoniums and maintaining fine collections of Fuchsias and Chrysanthemums. In more recent years, however, his firm has devoted its chief attention to the production of fruit trees, vines, bulbs, hardy plants, and seeds, and Mr. Chas. E. Pearson has taken his full share of the duties and responsibilities attaching to an extensive business. In addition, he has accomplished a vast amount of work on behalf of the horticultural trade, chiefly as founder of the Horticultural Trades' Association, of which he was the Secretary for a score of years. In association with his brother, Mr. Alfred H. Pearson, V.M.H., he founded the *Horticultural Advertiser*, which was the sole horticultural trade paper issued for a long period. For rather more than forty years Mr. Chas. E. Pearson has served on the Floral Committee of the Royal Horticultural Society. He has also taken a keen interest in the work of the Chamber of Horticulture and has been its Treasurer. Business duties and strenuous work on behalf of the horticultural trade would suffice to keep most men fully occupied, but such is Mr. C. E. Pearson's energy that he enjoys hobbies as well; formerly he was a capital hockey player, and latterly has become a tennis enthusiast, but these interests are for the purpose of keeping him physically fit. His real hobby is the collecting of bird's eggs, and in the pursuit of this hobby he has spent many holidays in Iceland, Lapland, Nova Zembla, and the southern parts of Europe, as well as Algeria. His collection of eggs is a particularly fine one. Mr. C. E. Pearson has a wide knowledge of birds and their eggs, and is no mean naturalist in other directions also. Few have a wider knowledge of the nursery trade and nurserymen and, we believe, there are few men so fully employed who find time to read so many books as he does. Of Mr. Pearson's many excellent personal qualities we have had ample evidence, as our acquaintance with him goes back to the time when he was a bachelor, at Chilwell. His severe illness last year caused widespread regret among his friends, all of whom are delighted with the complete recovery he has made.

MR. CHARLES E. PEARSON, V.M.H.

Slugs. — A horticultural conference was recently held at the Midland Agricultural and Dairy College, Loughborough, and in the absence of Professor Petherbridge, who should have opened a discussion on "Capsid Bugs," Mr. Roebuck, the adviser on plant pests at the college, opened a discussion on "Slugs." He pointed out that there were nineteen species which fell into three distinct groups, two groups feeding, preferably, on vegetables, and one on animal food. Each slug will lay, on an average, two hundred to three hundred eggs per season. These hatch out, weather conditions being favourable, in about four weeks. The eggs may be kept dry for months, but when moist conditions arise they still have the power of development. Mr. Roebuck pointed out how difficult slugs are to deal with in view of their nocturnal habits, as they usually feed between ten p.m and five a.m. He dealt with various experiments he had carried out, which fell under six distinct heads. The most effective treatments he had found were:—(Solutions), salt water, lime water, and carbolic acid; (Solids), sulphate of potash, kainit, salt, lime, alum, and various mixtures of these.

The Dahlia Year Book.—It is a sign of prosperity that the National Dahlia Society is enabled to resume the publication of a *Year Book*, and the Editor, Mr. W. J. Chittenden, who is also the Hon. Secretary, is to be congratulated in giving Dahlia lovers a most interesting brochure on their favourite flower. A portrait of the President, Mr. Reginald Cory, forms a frontispiece and serves to remind us that this gentleman has done more probably than anyone else in recent years to extend the cultivation of this beautiful autumn flower. Numerous short articles by well-known Dahlia enthusiasts, both amateurs and traders, deal with the flower from several aspects. Mr. Chittenden writes on the Dahlia for garden decoration; Mr. Harry Stredwick, who has probably won more prizes for Dahlias than any of his contemporaries, contributes an article on "The Cactus Dahlia for Exhibition"; Mrs. Courtney Page treats with the Dahlia from the standpoint of its use in floral decorations; Mr. J. T. West gives some reminiscences showing how the Show and Fancy types have declined in popular fancy. "One remembers," he states, "when at the exhibition only Show and Fancy Dahlias and Pompons were noticed by visitors." The Single Dahlia succeeded these types in popular favour, the Singles in turn being eclipsed by the Cactus type, and so on until the advent of the decorative Dahlias. Mr. West leads us to believe that some of the types now popular might have been obtained many years ago, for at one time "Nature's breaks," which "did not conform to the orthodox types, were destroyed without thought of what might come of them." We agree with Mr. West that there is no reason to suppose that the Dahlia has reached the end of its possibilities for new types and improvement. A short article by the late Mr. C. Harman Payne deals with the history of the Dahlia, while Mr. D. B. Crane contributes a chapter on "The Uses and Possibilities of the Modern Dahlia." Other articles are "The Dahlia in Scotland," by Mr. R. Fife; "Mignon Dahlias," by Mr. Joseph Cheal, V.M.H.; "Dahlias for Town and City Gardens," by Mr. Thomas Hay, V.M.H.; "British Dahlias Abroad," by Mr. A. Vasey, and "The Raising of New Dahlias," by Mr. A. Cobb. The National Dahlia Society is doing splendid work, especially in the direction of encouraging types of the flower that are suitable for garden decoration.

Squirrels in Scottish Woodlands.—The annual meeting of the Highland Squirrel Club took place in Dingwall, Ross-shire, when Mr. A. H. Duncan, solicitor, the Secretary, reported that 2,658 squirrels were killed during the year ending December 31, 1924, being 774 more than in 1923. While this was considered very satisfactory it was resolved to draw the special attention of all concerned to the fact that as squirrels are still very numerous in the north of Scotland, continued and increased operations against them are a great necessity. The area of woodlands controlled by the members of the Highland Squirrel Club is meantime 41,357 acres. The 1924 kill was, therefore, an average of only one squirrel per fifteen acres, a quite inadequate result. If this very serious menace to forestry is to be successfully combated it is quite obvious that immediate and more strenuous remedial measures must be adopted. The damage already done to northern Scottish woodlands is immeasurable, and further loss must be prevented. It was demonstrated to the meeting that membership of the club was really a financial gain to those who energetically carried on the crusade.

"Successful Gardens for Every Amateur."*—This is the title of a revised edition of a publication issued by the Chilean Nitrate Committee, which contains a lot of useful hints to amateurs on the cultivation of various crops and deals especially with the use of fertilisers. The tables on pp. 30 and 31 showing the amounts of manures to be applied per rod of ground for the growing of common vegetable crops, and the time to apply the various fertilisers are very useful. There is also a table on p. 25 giving examples of vegetables which may precede or succeed in a rotation. The value of nitrate of soda as a fertiliser is dealt with at considerable length; in view of the abnormally wet winter soils generally will be deficient in nitrogen this Spring, so that recourse should be had to some quick-acting fertiliser, such as nitrate of soda or sulphate of ammonia, and this little book gives the best methods of using nitrate of soda.

Appointments for the Ensuing Week.—Tuesday, April 14.—Jersey Gardeners' Society's meeting. Wednesday, April 15. — Royal Horticultural Society's Narcissus show (2 days). Friday, April 17. — Huntingdonshire Daffodil Society's show; Manchester and North of England Orchid Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Victoria Regia at Chatsworth.* This plant is at present in the most vigorous health, the leaves are rapidly increasing in size, and have already arrived at nearly the same dimensions as the largest which was produced during the last season. A flower opened on Monday, the 8th inst., and measured thirteen inches in diameter; this is more than two inches wider than any which had previously expanded, the largest never before having exceeded ten-and-three-quarter inches. I have also about twenty young healthy plants, which his Grace the Duke of Devonshire has kindly permitted to be distributed. I shall therefore be most happy to furnish a plant to any person who possesses sufficient accommodation for its successful growth, but no tank of less dimensions than fifteen feet in diameter will answer for the purpose. Our new tank at Chatsworth, already in progress of building, will measure thirty-three feet across (inside measure), and if necessary, we can add considerably to the size. Of the plant's duration it may be well to state that the flowering specimen has formed large, fleshy root-stocks, and that its perennial character may now be considered almost certain. *Joseph Paxton, April* 10. *Gard. Chron. April* 13, 1850.

THE ROSE GARDEN.

ROSES AND VIOLAS.

No outdoor floral combination is prettier or more strikingly effective than that of Roses and Violas arranged with some regard to their shades of colour. The association depicted in Fig. 101 is one of pink and mauve, or pale blue. Madame Abel Chatenay and Caroline Testout representing the Roses, while Kitty Bell and Maggie Mott are abundantly proving the worth of Violas so used. Several other colour combinations of these two most valuable hardy subjects may be arranged where such are appreciated. I know I am bordering on a big and debatable question which it is not intended to enter into just now, namely, that of growing any other plant in the same bed or border with Roses—the argument being, generally, that it is not possible to treat the Roses so as to ensure the best results in growth and colour when they are carpeted with other plants. *C. Turner.*

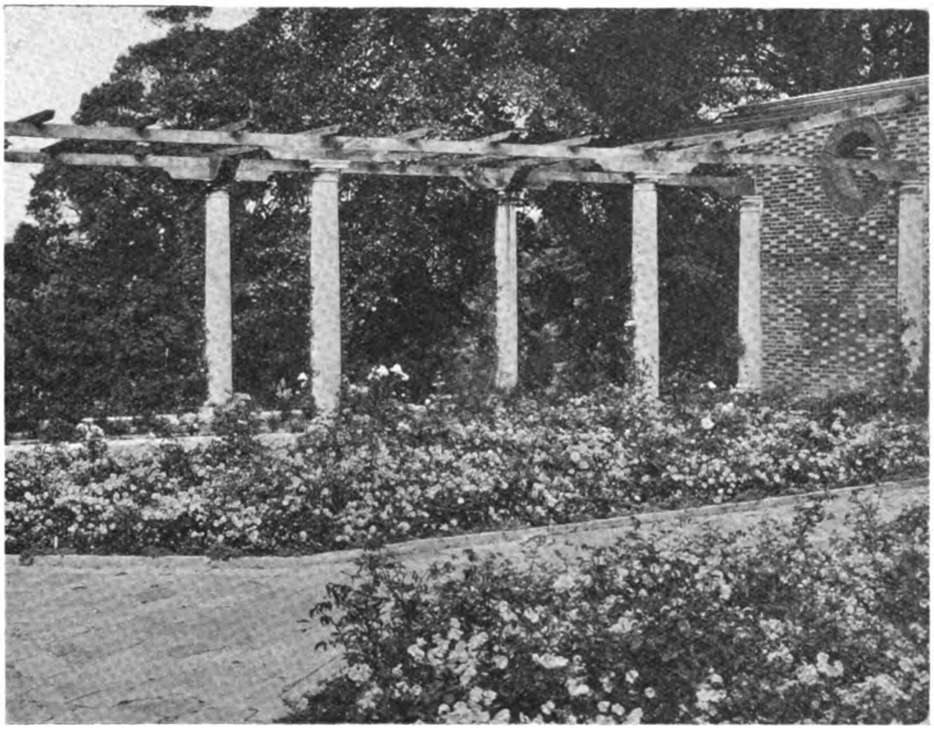

FIG. 101.—ROSE BEDS WITH VIOLAS AS A GROUNDWORK.

HARDY FLOWER BORDER.

HEMEROCALLIS.

A RICH, deep loam, mixed with plenty of humus and abundant moisture, suit these plants, and although, as the generic name indicates, the individual flowers last but a single day, the prolonged succession of blooms during summer will give much pleasure and fully compensate for the blooms somewhat ephemeral quality.

H. Dumortieri has large, orange-yellow flowers stained with brown on the outside; the scape is erect and bears three or four blooms. The leaves are long, very narrow, and tapering. The plant grows about two feet high; it is very near to H. minor and is synonymous with H. rutilans and H. Sieboldii. It is a native of Japan and Siberia.

H. flava has fragrant orange-coloured flowers; the leaves are numerous, crowded and narrow, keeled, about two feet in length; the height of the plant is about three feet. This valuable border plant was introduced in 1596; it is cosmopolitan, its habitat ranging from South Europe to Western Siberia and Japan.

H. Middendorffii has golden-yellow blooms in terminal heads; the leaves are long and broad. It is a very beautiful plant and grows three feet high. It is a native of Siberia and Japan.

H. fulva has very large flowers of a tawny yellow, with wavy segments; the leaves are very broad, long and keeled, and the plant attains to a height of about three feet. Sometimes known as H. disticha, this species has a range from South Europe to Japan and was introduced in 1596; it has inordorous flowers. The species is figured *Bot. Mag.*, 64. H. Kwanso is a variety of H. fulva with large, double, bronzy-yellow flowers, and there is a sub-variety of this plant with variegated foliage.

H. minor has clear yellow flowers, suffused with green; they are small and possess some fragrance. The heeled leaves are very narrow and pointed; growing barely eight or nine inches high this is a fine plant for the rock-garden. It is synonymous with H. graminea and is a native of Siberia, Northern China and Japan. This little species was introduced in 1759.

Other species and varieties of merit are H. aurantiaca, H. Baronii, H. citrina, H. hippeastrum, H. ochroleuca and H. Thunbergii; new garden varieties are Sir Michael Foster and May Queen.

The Day Lilies are among the oldest of garden plants and eminently worthy of a place in the hardy flower border, on the banks of streams, or in the shrubbery border.

Propagation of these plants is easy by division of the roots, but they resent frequent disturbance. *Ralph E. Arnold.*

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* *Successful Gardens for Every Amateur.* Chilean Nitrate Committee, Friars House, New Broad Street, E.C. 2. Free on application.

B

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Dendrobiums.—After their long season of rest, plants of Dendrobium Phalaenopsis Schröderae are commencing to grow afresh. When the young shoots are a few inches high new roots will appear from their bases and the necessary re-potting or re-surfacing should be given attention. If the compost is still good and the plant has sufficient growing-space for another season, a portion of the old soil may be picked from between the surface roots and new compost substituted. If re-potting is decided on the new receptacles should be only just large enough to accommodate the plants, as they do best in a restricted rooting space. The plants will grow equally well either suspended from the roof rafters or placed on the stage; the most important detail in their cultivation is to keep them near to the roof-glass in order that they may obtain plenty of light. If it is intended to suspend the plants they should be placed in shallow Orchid pans, preferably those without side holes. Pots are the most convenient for placing on the stage. In potting half fill the receptacles with drainage material and arrange the plants so that the young growth is level with the rim; make it secure by tying it to a neat stick, whilst those in pans may be attached to the wire handles. Osmunda fibre cut into short portions, with a small quantity of chopped Sphagnum moss and crushed crocks form a suitable rooting medium. During its season of growth this Orchid requires considerable heat and plenty of atmospheric moisture and overhead syringings. It does not require much shading from bright sunshine; shade for two or three hours during the middle of the day will suffice. D. bigibbum and D. superbiens are closely allied species, and require similar treatment to that afforded D. Phalaenopsis.

Treatment of Calanthes after Potting.—After being repotted Calanthes should be grown in a temperature of 65° to 70°, and very little water will be needed until the young roots have grown near to the sides of the receptacle, or the tips of the young growths will turn black. As the leaves begin to unfold the water supply may be increased, and when the new pseudo-bulbs are formed an occasional application of weak liquid cow manure will be beneficial, but feeding should be discontinued when the foliage begins to show signs of maturity. An Orchid house is not essential for Calanthes; they may be grown equally well in an ordinary plant stove, a Melon house, Cucumber house or similar structure. Plenty of light is needed, just short of scorching the foliage by the sun's rays.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Sweet Peas.—If the soil is in good condition and the plants have been well hardened, Sweet Peas may now be planted out on the sites prepared as previously advised. Whether grown in pots or boxes they should be planted singly at from six inches to nine inches apart. If short, twiggy sticks are inserted on each side of the row so soon as planting is finished, they serve the double purpose of keeping the plants in position and affording some protection from cold winds. The larger sticks may be inserted so soon as growth becomes active. A further sowing may be made to continue the supply of flowers during the late summer and autumn. If grown for supplying cut blooms, short rows of distinct varieties may be grown in the reserve garden.

Herbaceous Borders.—Growths of many of the earlier flowering subjects are developing and the thinning of shoots in large clumps should receive early attention to prevent overcrowding and also to conserve the energies of the plant for the development of those shoots which are left. Keep the surface soil stirred, apply a dressing of bone-meal and work it into the soil with the cultivator.

Gladioli.—In order to grow these handsome flowers to perfection it is necessary to prepare the ground thoroughly during the winter. Heavy soils should be lightened by liberal additions of light material. Dormant corms may now be planted in the positions in which the plants are to flower, covering them to a depth of about four inches. In soils of a heavy nature it is a decided advantage to put clean sand under and over each corm, but on light soils this is not necessary. Corms started in pots should not be planted out-of-doors until May but grown under cool conditions.

Summer Bedding Plants.—Seedling plants of various kinds intended for summer bedding will need careful attention. So soon as the seedlings can be handled and before they become drawn in the seed-pans, prick them off and grow them on in moderate warmth to ensure dwarf, sturdy specimens. Seeds of Ten-week Stocks, Marigolds and Zinnias may now be sown. It is a mistake to raise these plants in strong heat; an ideal place for raising them is over a nearly-spent hot-bed or, failing that, in a cold frame.

Canterbury Bells.—To produce strong plants of Campanula Medium for autumn planting, seeds should be sown during the first half of April. Raise the plants in a cool house, prick them out into boxes and transfer them to nursery quarters so soon as they are ready.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Chrysanthemums.—Preparations should be made for the transference of the plants from the three-and-a-half inch sized pots to those of five-and-a-half inches and six inches diameter. To keep the plants vigorous and healthy they should not occupy the three-and-a-half inch pots for more than six or seven weeks, assuming they were strong and healthy when placed therein. It is well to prepare the potting compost in advance of the time when it will be required. For Chrysanthemums a fairly heavy loam is preferable to one of a light texture. For this potting it should be broken up into pieces of about an inch square, and if it should be deficient in fibre some of the finest particles should be lightly sifted out of it, retaining all the fibre possible. A compost made up as follows may be recommended for growing the plants, either for exhibition or for home use:—seven parts loam (a part being represented by one barrowload), two-and-a-half parts good leaf-mould, two parts old hot-bed manure (the two last-mentioned ingredients being passed through a half-inch sieve), half a part of coarse silver sand and one bushel of crushed charcoal. To each barrowload of soil add one six-inch potful of bone-meal, one three-inch potful of "Le Fruitier" and one three-inch potful of soot. Mix the materials thoroughly and turn the heap at intervals of two or three days before it is used. Pot fairly firmly and make sure that the balls of the plants are not in the least dry when they are turned out of the old pots. Place the newly-potted plants in a cold frame on a coal ash bottom, give them a slight surface watering, which should suffice for a few days, after which they should be watered thoroughly. Keep the frames close for a few days, lightly syringing the plants in the mornings and afternoons of fine days. To safeguard the plants from injury by frost, the frame lights should be covered with mats at night time for the next few weeks. Do not, however, coddle the plants, as they will give the best results if grown sturdily.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Cherries.—After the fruits have set keep the temperatures of the house at 45° by night and 55° by day, using fire-heat only when absolutely necessary, until after the stoning period is over. Admit air to the house early in the morning when outside conditions are favourable, and close the ventilators in the afternoons between three and four p.m. Spray the trees thoroughly with tepid, soft water the first thing in the morning and again at closing time. Pay strict attention to the watering of the roots at all times, giving pot trees weak liquid manure on three occasions weekly, as the pots will now be full of roots. Permanent trees will require constant attention in tying the leading shoots for extension where such are required to fill bare spaces. Pinch all the other growths to promote the formation of fruit buds. Keep a sharp watch for black fly and fumigate the house slightly with nicotine at its first appearance, making sure that the foliage is dry before starting the lamps. Damp the paths and other bare spaces several times daily, according to the weather, to ensure plenty of atmospheric moisture.

Melons.—The earliest Melon plants now require daily attention. The grower should endeavour to obtain two fruits per plant from this batch, and the shoots should be regulated accordingly. Hand pollinate the flowers, otherwise one fruit will swell and the other damp off. Stop all shoots at one leaf beyond the fruit and all succeeding growths that appear. I give the roots a top-dressing of rich soil when the fruits start their second swelling. This gives the plants plenty of food to finish the crop well. Keep a sharp watch for green fly, and fumigate the house on its first appearance. Spray the plants with tepid water early in the mornings and twice in the afternoons. Very little ventilation is required, just sufficient to keep the foliage strong and healthy. I have often allowed the temperature to rise to 90° to 100° with sun heat with the best results, but the house must be fully charged with moisture, for a dry atmosphere would prove fatal to success. A night temperature of 70° or as near to this figure as possible should be maintained at this stage. Use plenty of manure water for damping down the house. Make another sowing for succession and also of Canteloupe varieties for cropping in frames during the summer.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Spraying Fruit Trees.—Much of the material applied to fruit trees as winter washes was washed from the trees by heavy rains in February. Another spraying with Bordeaux mixture would be very beneficial, especially to trees that have been affected by brown rot and leaf scab. Plums are, as a rule, the first to open their flowers, and these should be dealt with first. During the past few years I have sprayed Plum trees with nicotine soap a week in advance of the Bordeaux mixture. By this treatment my Plums have not been troubled much with the leaf Aphis; the Bordeaux mixture is sprayed on just before the flowers expand. **Sweet Cherries** and **Morello Cherries** may be treated in the same way.

Pears.—Where Pear trees are not showing fruit buds, the grower will have an opportunity to treat for leaf-scab, which was very prevalent last year. Spray the trees with Bordeaux mixture just as the first leaves are opening, and again a month later, if necessary. Trees should not be sprayed with a poisonous specific after the fruits have set, for some of the poison would be deposited on the fruits; copper sulphate would discolour them.

Apples.—These trees are later in flowering than usual, and this will enable them to be sprayed after the above-named fruits have been attended to. Certain kinds of Apples set their fruits before others have expanded their blossoms, and the grower needs to watch closely to ascertain when the spraying should be done. Some varieties have a greater length of flower stem than others, making it much easier for the operator to manipulate the spray: in others the flower trusses are very closely set and these need more care in spraying. If the trees are troubled with caterpillars, put one pound of arsenic of lead into forty gallons of Bordeaux mixture, stir the mixture vigorously at the time of mixing and apply it, but not after the flowers have opened. Great care must be taken when spraying fruit trees near vegetables or salads; use canvas sheets for covering the vegetables while the spraying is in operation.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Sweet Corn.—This vegetable is gradually becoming more popular in this country, and there is no reason why good heads should not be produced in any reasonable summer. I prefer to sow the seeds singly in sixty-sized pots in slight heat, and to keep the plants growing steadily. Shift the seedlings into forty-eight-sized pots when they need more root room, for they should not be allowed to become pot-bound. When they become thoroughly established in the larger pots gradually harden them off, but do not be in a hurry to plant them out-of-doors; the last week in May, or when all signs of frosty nights have disappeared, is sufficiently early. The little extra labour of re-potting always repays with this crop. When planting Maize plants in their permament quarters, choose as sunny a spot in the garden as possible, and give the roots plentiful supplies of water during dry weather in the growing season.

Lettuces.—Plants of Cos and Cabbage Lettuces that were pricked off in boxes some time ago should now be thoroughly hardened and ready for planting out-of-doors. Those in the seedling boxes may also be pricked out for successional batches. Slugs and other insects will be very prevalent this year after the mild winter, therefore every measure should be taken to exterminate them.

Potatos.—The present is a suitable time to undertake the planting of second-early Potatos. Make the rows two-and-a-half feet apart, as close planting is never profitable. Use fresh seed each year, and for general work retain those varieties which are known to be successful in the particular district, always leaving space to try two or three new varieties in small quantities.

Broad Beans.—Make further sowings of Broad Beans for successional cropping. Black aphis may be troublesome on the later sowings; pinch out the tips of the main shoots and burn them, then give the plants a thorough syringing with Quassia extract; if one spraying does not exterminate the fly, a second one will usually rid the Beans of the pest.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penarth, Westmoreland.

Hardy Flowering Annuals.—One of the brightest borders in the garden, if well arranged, is the annual border. Annual Larkspurs, Lupins, Lavateras, Cornflowers and Poppies may all be used in the background of the border, utilising dwarfer kinds such as Godetias, Cacalias, Phacelias (syn. Eutoca), Collinsias, Saponarias, Viscarias, Nemophilas and Candytufts in the front portion. If the ground is in good condition it is perfectly safe to sow the seeds of these plants now. The ground should be first well raked in order to reduce the surface to a fine tilth for covering the seeds. Sow the seeds evenly and at a depth just sufficient to cover them with fine soil. When large enough the seedlings may be thinned, allowing each plant the necessary space required for its full development. Staking is necessary for the taller varieties and Spruce branches cut into suitable lengths are excellent for the purpose; as the plants develop the evergreen branches are hidden by the growth. Soil of an excessively rich nature is not to be recommended for annuals.

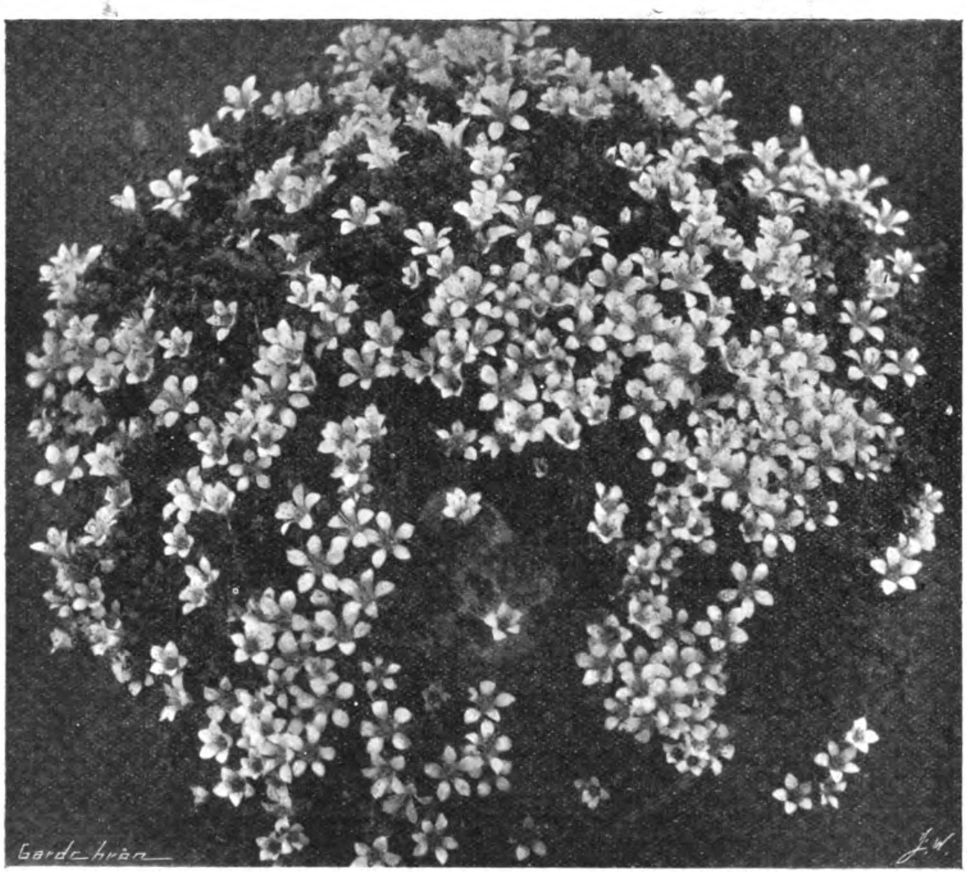

FIG. 102.—SAXIFRAGA OPPOSITIFOLIA ALBA.

Dahlias.—The propagation of these plants from cuttings should now be brought to an end. If the stock of any variety is short of the number required the stock may now be increased by dividing and potting up the stock plants. The rooted cuttings may be grown in close, moist heat until they are well rooted and then gradually hardened off.

Lettuces.—Make the first outdoor sowing of Lettuces. Seedlings raised under glass may, if sufficiently hardened, be pricked out on a sheltered border. Slugs destroy this crop in early spring; sharp river sand liberally sprinkled around the young plants is most effective in warding off these pests.

ALPINE GARDEN

SAXIFRAGA OPPOSITIFOLIA ALBA.

This charming little Saxifraga (Fig. 102), with its tiny white flowers, forms a very great contrast to the Burseriana varieties. The distinct character of its very crowded small foliage and numerous flowers carried on long strings of shoots, lying closely side by side, make it a pleasing plant to grow, either in pots or outdoors in the rockery. It is a very hardy Saxifrage and is easy of culture, preferring a seeming neglect rather than kindly attention through the autumn and winter until early spring. The hot days of summer try it severely, and watering must not be neglected through that period. The flowers are set on extremely short stalks, indeed it is only half-an-inch from the foliage to the top of the flower. Each leaf is opposite to another, hence the specific name; the leaves are very small and give an appearance of brownness to the plant, which provides a good contrast to the white flowers. This very dwarf plant, as figured, is growing in an 8-inch half-pot, and the pot is almost covered with growths which hang thickly round the sides. A few pieces of limestone are placed in the soil, which consists of loam and coarse sand. If this Saxifrage is grown outdoors it requires a position where it may push its roots deeply into the soil. It flowers in this neighbourhood (Croydon) in February and early March, and needs a sunny place, otherwise it will flower sparsely. *Mark Mills, Coombe House Gardens.*

THE ST. HELENA VIOLET.

This delightful little plant is seldom out of bloom in our west country garden, and even in the depth of winter the peculiarly fresh and refined fragrance of the flowers is remarkable. These latter are a cool blue-lavender and about half the size of those of an average Sweet Violet. The plant is also less robust than most kinds of V. odorata, of which it is presumably a form. The leaves are small, and with us it is slow to make runners, and these are equally slow to root.

The St. Helena Violet does not appear to be in commerce, and this is odd seeing that it is both distinct and very charming. What its origin is and why it has been given the name it bears some reader may be able to state. *A. T. J.*

ALPINES FROM SEEDS.

M. Correvon's notes on seed-raising in the issue for March 14 (page 180), are, as usual, full of interest, but the atmospheric conditions which prevail at Chêne-Bourg are very different from those we have in England, and I feel convinced that English gardeners anxious to raise choice alpines from seeds would do well to pay rather more attention to composts for the seed pans than M. Correvon appears to think necessary. All plants which hail from rocky crevices, and many from the alpine turf (since rock is often very near the surface), must, in nature, force their way, as tiny seedlings, into minute rocky fissures, and we should expect these kinds to appreciate the provision of natural or artificial rock in the seed compost. Practice certainly supports theory in this respect—at least so far as our own climate is concerned—but I have found broken potsherds cleaner and more satisfactory than broken sandstone or limestone, and yet exceedingly porous. For encrusted Saxifrages and other lime-loving kinds, about two parts of crushed potsherds, one part of old mortar rubble or calcined oyster-shell, and half a part each of peat and turfy loam will form a suitable compost; all the ingredients should be passed through a quarter-inch mesh sieve. For other saxatile plants, which have no liking for, or even an aversion to, lime, the mortar rubble should be omitted, and a little more peat and loam may be allowed, though I have proved that these rock-haunting species will germinate and grow in a compost nine-tenths of which is stone chippings or fragments of potsherd.

It is, no doubt, true that seeds will germinate and the seedlings make good progress for a time in composts which would not avail to keep the adult plants in health The behaviour of Saxifraga florulenta, as described by M. Correvon himself (*The Garden*, May 6, 1922, page 217), may be taken as a case in point. Plants of this species in their habitat in the Alps Maritimes can only survive to maturity in the face of the granite cliff, but seeds germinate on the detritus below, and young plants may be collected therefrom and acclimatised in a shady, dry wall. The detritus, however, is very stony, and to that extent resembles the rooting medium of the plant's proper station. I once experimented with seeds of Saxifraga lantoscana, sowing as nearly as possible equal quantities of seed in two pans, one containing ordinary light seed compost and the other soil specially made up in the way already described. From the pan of ordinary compost perhaps a dozen seedlings survived to be pricked off. The other pan was "alive" with seedlings and, had I wanted them, I could probably have pricked off more than a thousand plants.

I have found that Sphagnum is very useful for raising seeds and growing on plants of moisture-loving species, such as the various Pinguiculas, the bog Gentians, etc., and it is also useful, just over the drainage, as a moisture retainer or "sponge," but I incline to think that broken potsherds retain moisture equally well, and they never settle unevenly, causing surface irregularity, as, unless very tightly pressed, the Sphagnum is apt to do; and tightly-wadded Sphagnum cannot absorb much moisture.

Of the advantages of immediate sowing and of top-dressing the seed-pans with snow (when available) there can be no two opinions. As regards the harvesting of seeds, I feel sure that many gardeners would get better, or at any rate quicker germination, if they harvested their seeds before they were dead ripe; this applies to shrub seeds as well as to those of herbaceous and alpine plants. But, of course, seeds not fully ripened must be sown forthwith, since the induration of the skin and complete ripening of the tissue are necessary to safeguard the germ during storage. *R. V. G. W.*

BELLIS ROTUNDIFOLIA COERULESCENS.

This delightful little Daisy from Northern Africa is, indeed, a gem, and invites affection if only because it has the appearance at first sight of being a pale mauve variety of our native field Daisy.

The colour is somewhat variable, passing from white to palest blue with mauve and lavender shades. The flowers are about as large as those of the common Daisy; the leaves are slightly hairy with slender stalks, about two or three inches long.

A little suspicion has been cast upon its hardiness, but here, on the Cotswolds, it has withstood several winters, increasing quickly and flowering freely for the greater part of the year, at any rate, from early spring to late autumn.

The plant grows freely in well-drained loam and on a sunny ledge will spread rapidly, while it is a beautiful plant for the alpine house. It was introduced from Morocco in 1872 and is figured in *Bot. Mag.* tab. 6015. *Ralph E. Arnold.*

INDOOR PLANTS.

BIGNONIA AND TECOMA.

Bignonia and Tecoma are closely allied, the difference consisting chiefly in the partition of the fruit, the capsule of Bignonia being septifragal and in Tecoma loculicidal. They are amongst the most beautiful flowering climbing plants grown and do well either in a greenhouse or conservatory. Some of the species require a warm temperature whilst others need only the conditions of an ordinary cool glass house. They mostly produce their flowers from well ripened buds of the previous year's growths. If the wood is well hardened during the summer the plants will flower freely on short shoots, the season of blooming being autumn and winter. The plants are not subject to insect pests as are many other climbers.

After flowering, all the weakly growths should be cut out to admit plenty of light and air to ripen the shoots that are retained.

A few species, such as Tecoma Smithii, may be grown as pot plants. This attractive species bears bright yellow flowers freely and when grown in pots is invaluable for autumn and winter decoration of the mansion, conservatory, or public halls. T. Smithii is a hybrid raised in Australia between Tecoma velutina and T. capensis and is easily propagated by cuttings of half-ripened wood in the spring. Procure good, strong shoots as cuttings, insert them singly in small pots in sandy soil and place them under a hand-light or frame over slight bottom heat. When roots have formed pot them on as required, but care must be taken not to over-pot them, as they do not succeed well if over-potted; moreover, the soil gets wet and sodden. Should large flower heads be required the growth should be restricted to a strong, single stem; if bushy specimens are preferred the plant should be stopped once or twice and several shoots allowed to develop. This Tecoma does best under perfectly cool treatment, in fact it is an advantage to stand or plunge the plants out-of-door in ashes during the summer in a sheltered situation, shaded from the bright sun's rays. The best soil for this hybrid is a mixture consisting of two-thirds good. turfy loam, one-third good fibrous peat or leaf-mould, with a little decayed cow manure and silver sand added. The pots should be well drained.

Tecoma capensis produces clusters of orange-scarlet flowers. It makes a good pot plant and should be treated similarly to T. Smithii. This also is a good indoor climber.

T. jasminoides has white flowers streaked with rose; T. grandiflora is a beautiful plant for the cool conservatory or it may be grown out-of-doors in a warm, sheltered spot against a south wall, but it needs protection during severe weather. This species bears clusters of orange-scarlet flowers in late summer.

T. radicans major is another free-flowering variety and is a beautiful picture when covered with clusters of its scarlet flowers. It may be planted in a cool conservatory or grown against a warm, south wall out-of-doors in the south and west of England, but it requires a little protection from severe frost.

All the Bignonias are neat climbers and may be allowed to ramble up the roof-rafters and cover the roof of the conservatory. Some of them require only just sufficient artificial warmth to ward off frost, such as B. speciosa, which has pink blooms stained with purple, and B. buccinatoria (syn. Cherere) with orange coloured flowers.

The following species need a temperature of about 60-65°; if grown in a higher temperature than this they will make gross growth at the expense of flowering:—Bignonia capreolata which has orange-coloured flowers; B. littoralis a fine red-flowered species; and B. magnifica which has mauve to purplish-crimson flowers.

There are many others, but these are the best for general purposes.

If grown in an excessively dry atmosphere or near heated pipes the plants are subject to attacks of red spider and thrip; syringing the plants two or three times daily will serve to keep both these pests in check.

In planting climbers make sure that the ground is properly prepared in advance. Clear away two or three barrow loads of the old loam and substitute good soil. Use clean crocks or brick rubbish for drainage and on this place a layer of rough siftings from the compost to prevent the soil from getting sour or sodden. The soil for planting should consist of a good, rough mixture comprised of turfy loam two-thirds, fibrous peat or leaf-mould one-third, with silver sand added. See that the surroundings are thoroughly clean and free from insects. Should the plants be well rooted to the pot, loosen the soil and gradually free the roots, but be careful not to break them. Guard against planting the stem too deeply. *John Heal, V.M.H.*

ACHIMENES.

These charming plants are useful for furnishing the greenhouse during the summer and autumn and it is surprising they are not more generally used for this purpose. They may be raised from seeds, but it is more usual to grow the named varieties, and these are increased by means of the scaly rhizomes, which are stored in a dry state during the winter. They may be put directly into 48-sized pots, or shallow pans; if this is done they require very careful watering until they are growing freely. The usual method is to lay them out in shallow boxes in leaf-mould and sand, and when the shoots have grown some two inches long, to arrange them in pots or pans according to requirements.

Such large-growing species as A. longiflora and its varieties require six-inch pots, and they make fine specimens in eight-inch or nine-inch pans. Some of the more slender-growing sorts, such as A. coccinea, are very effective when made up into baskets. All of them require ample drainage, a light, rich compost, and careful watering until they have well filled their pots with roots when they enjoy frequent applications of diluted liquid manure and soot water.

During their season of active growth,

Achimenes should be grown in a temperature of 60°, but as they approach the flowering stage they should be gradually accustomed to greenhouse conditions.

The plants are very subject to attacks of Begonia mite, which may be easily destroyed by the use of a sulphur vaporiser.

During recent years, white fly has proved very troublesome to Achimenes, and the best remedy for this is fumigating with sodium cyanide. There are also several proprietary remedies which many cultivators prefer to use, as they entail less trouble than that of preparing the cyanide, which is, in addition, a very deadly poison needing great care in its use. One-quarter-ounce of sodium cyanide in half-ounce of sulphuric acid and two ounces of water per one thousand cubic feet of house space will kill white fly. All the materials should be very carefully weighed and measured, taking care to add the acid to the water. Shallow bowls are best for the purpose, and if the house is of considerable size, it is best to use at least two vessels. Place the vessels containing the acid and water in position. Put the cyanide in a piece of paper, slip it from the paper into the bowl or other vessel and quickly leave the house. All doors should be secured, and it is well to put a notice on the door forbidding anyone to enter the house. The safety factors for the plants are darkness, and having the roots on the dry side. Safety for the individual is care and common sense. The house may remained closed all night, and it should be arranged that a ventilator can be opened from the outside. *J. Coutts.*

CYRTANTHUS.

The genus Cyrtanthus includes some twenty species of bulbous plants, natives of South Africa, and in common with many other South African bulbs that used to be grown extensively they are now seldom seen outside botanic gardens. This is much to be regretted, as most of them are very beautiful, and their cultural requirements are of the simplest, as most of them succeed perfectly in an ordinary or warm greenhouse.

They grow freely in any good potting compost, but in common with most bulbous plants ample drainage is essential for their well-being. In the case of some of the larger-growing species, such as C. obliquus, one bulb may be placed in a five-inch pot, but most of the species have quite small bulbs, and five or six of these may be placed in a five-inch pot, in fact they seem to succeed best when the bulbs are somewhat crowded. After repotting, or when dry bulbs are potted up, water should be very carefully afforded at the roots until growth commences and plenty of new roots have been made. Over-watering after repotting is one of the most common causes of failure with bulbous plants of all classes.

Cyrtanthi should not be dried off at any time, although during the winter months they should be kept on the dry side. They are somewhat uncertain in their flowering period, but usually flower during spring or early summer, and again during the autumn, or they may flower at irregular periods throughout the year. Their flowers vary in colour from white in the case of C. Mackenii, to pale yellow, and from orange to bright red and scarlet.

There are three distinct types, viz., C. obliquus, with a flower scape about two feet tall, with drooping, tubular flowers yellowish in colour, variegated with orange-red and green; C. sanguineus, a very beautiful species with bright orange-red flowers, tubular at the base and broadly funnel-shaped above the middle; C. Galpinii (Fig. 103) belongs to this section, and has bright red flowers tinged with yellow; C. sanguineus is also interesting as it is one of the parents of C. hybridus.

The last-named is a bigeneric hybrid between C. sanguineus and Vallota purpurea. The hybrid, which most resembles the latter parent, is a very beautiful plant, but I am afraid it is somewhat scarce in cultivation at the present day. Originally there was two varieties, one with paler-coloured flowers than the other.

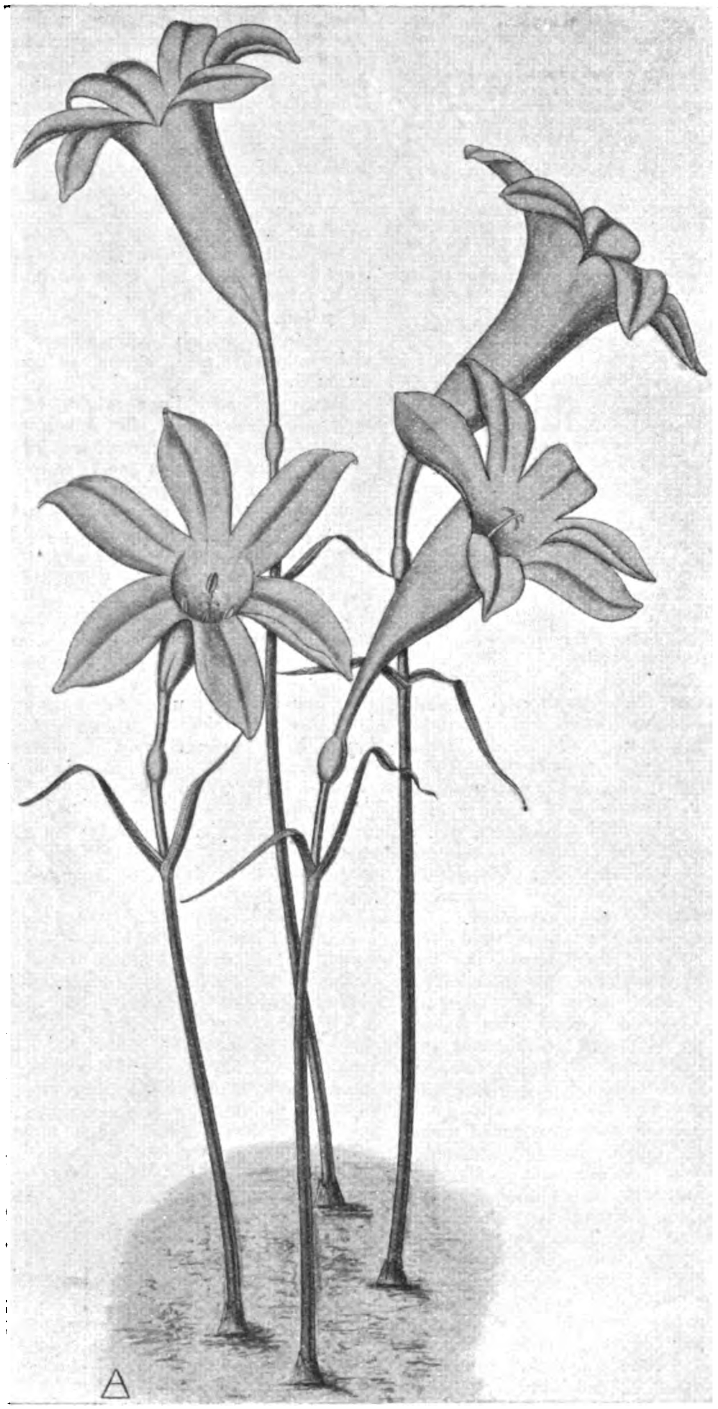

FIG. 103.—CYRTANTHUS GALPINII.

Most of the other species of Cyrtanthus that are, or have been in cultivation, have narrow, tubular, incurved flowers. The species most common in cultivation are C. angustifolius, with orange coloured flowers; C. intermedius, a garden hybrid between C. Mackenii and C. angustifolius; C. lutescens, a very pretty species with pale yellow flowers; C. Macowanii, with bright scarlet flowers, C. O'Brienii, also with bright scarlet flowers and intermediate between C. angustifolius and C. Macowanii; C. Mackenii, with white, sweetly-scented flowers, with C. lutescens, is probably the freest flowering of all the species, as it blooms more or less throughout the year.

Other species are C. uniflorus, with white flowers with a red stripe down the centre of each segment; C. Huttonii, with pale red flowers; C. odorus, bright red; C. parviflorus, with scarlet flowers; C. Tuckii, and the curious C. spiralis, with long, ribbon-like leaves, spirally twisted; this interesting species is figured in *The Gardeners' Chronicle*, 1897, II., p. 303, Fig. 89.

It is a pity that so little interest is taken in this genus and the many other beautiful and interesting bulbous plants of South Africa that were at one time popular in our gardens. *J. Coutts.*

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THE GARDEN IN ANTIQUITY.

IV. ASSYRIAN GARDEN RECORDS.

We are not left to surmise or to general statements as regards Assyria. Such records as the following are frequently to be met with. The King Ashur-natsirpal, about 860 to 885 years before Christ, states that he found Kalah a heap of ruined buildings and mounds. Thereupon he dug out a canal from the upper Zab, and called it Pati-Khegalli. He planted gardens around it and rebuilt the walls of the city (Nineveh). This is a typical record. The cities of sun-dried bricks were, either on account of neglect or invasion, constantly falling into disrepair, and as constantly being rebuilt, enlarged and extended. As Layard informs us, the monarchs used the materials taken from the ruins in the construction of new residences for themselves. Thus the royal cities, such as Babylon and Nineveh, attained the dimensions assigned to them by the Greek geographers and by the Hebrew Scriptures. "The numerous royal residences, surrounded by gardens and parks, and enclosed by fortified walls, each being a distinct quarter [as illustrated even to-day by such an English city as Chichester] called by a different name, and the vast mass of private buildings, fields and gardens lying between them, formed together the great city known to the Jews and Greeks as Nineveh." In very many instances the gardens lay outside the city walls, the city being compact for safety; but occasionally it happened, especially in the case of the great capitals, that the city walls enclosed a space sufficient to allow of a large growth of cereals and fruits in the event of an invasion.

Of Tiglath Pileser I. it is said that he set the shadūfs to work all over the country in order to irrigate the land, and "made plantations and parks, filling them with rare trees and plants." He also "built several palace courts, called after the costly woods with which they were furnished—the Cedar house, the Box-wood house, the Tamarisk house," and the like. This was about 1,120 B.C., and it is to this monarch that we owe the first detailed record thus far discovered of royal Assyrian achievements. He caused a clay cylinder setting forth his exploits and greatness to be buried one at each of the four corners of the temple of Ramman; and as each cylinder bore the same inscription it was possible, when they were discovered, to complete the broken text of one from the perfect text of another. We learn from such well-known authors as Diodorus Siculus (about the beginning of the Christian era), Quintus Curtius, and others, that gardens and arable land were attached to the residences or included within the precincts of these eastern cities. They inform us that there was space enough within the walls of Babylon, for example, to cultivate Corn for the use of the whole population in case of siege, besides orchards and gardens. So Jonah states, there was much cattle in Nineveh, which may be taken to imply pasturage and Corn land. Comparison may be made with other ancient cities, such as Isfahan, Damascus, or Delhi, the size of which in the time of their glory permitted of pleasure grounds and parks, orchards and gardens, pools and lakes. These latter were either supplied by artificial means or water was drawn from the neighbouring river, where such existed, in order to ensure the necessary irrigation. This is a subject of great importance, which will come under observation again and again as our study is pursued.

Many different lines might be followed in order to show that the Assyrians were very advanced in their knowledge of the culture of fruits and flowers and were passionately devoted to the pursuit. It is generally granted that a people's worship reflects their thoughts and feelings; and since the Assyrians made large offerings to their gods of flowers and fruits, devoted to them a variety of sacred trees, and represented them as carrying, wearing, and enjoying these terrestrial luxuries, we naturally infer a wide acquaintance with the same. Sacred flowers of many kinds are represented on the bas-reliefs found in Babylon, Nineveh, and other cities. Among the sculptures found in Nimroud, were representations of a pavilion with a fringe in the form of Fir-cones and Tulip flowers. While Tulips grow wild in Persia, we know that they were early brought under cultivation, and distributed to other and far-distant lands, accompanied by their native name. Herodotus tells us of the Apple, Rose, and Lily being carved or represented on the knobs or handles of sticks for ornament, and excavators have found such in the ruins of Assyrian cities, thus confirming the statement of the great historian. During the early days of his researches at Nimroud, Layard found a bas-relief some nine feet in height, representing a human figure raising the right hand and carrying a branch with three flowers, resembling the Poppy, in the left. Sometimes five flowers were represented, but it may be of interest to note that in many Eastern lands three was the sign of the plural, and stood for any number. The Poppy-like flower was in some instances associated with a kind of Lily, and the Lily was a well-known and much-prized flower everywhere and at all times in the East.

From Layard and other early explorers we are able to learn a good deal about these blossoms. Thus a flower with seven petals is represented in the embroideries on the garments of winged figures alternately with another ornament resembling a Tulip either in bud or in full bloom. That the Assyrians derived the latter from the Tulip or Lily seems to be well-nigh proved by the representation of a flower and bud in a bas-relief which was discovered at Kouyunjik. Perhaps we have here some evidence that Assyrian art influenced that of the Hebrews and even of the Greeks. The Pomegranate and the Lily were favourites with these nations. A network of Pomegranates was one of the principal ornaments in the temple of Solomon, and it is held that the use of the Lily by the Greek artists may be traced directly to Assyria. "The Assyrians also resembled the Greeks and Romans in introducing flowers into their feasts. In the long train of attendants represented at Kouyunjik as bringing the materials of a banquet into the palace of the King, a considerable number bear vases of flowers," states Rawlinson.

Jeremiah in his day urged the Jewish captives in Babylonia to build houses and dwell in them, to plant gardens, and eat the fruit thereof. This is a most interesting sidelight on our subject. He was evidently thinking of gardens as orchards, or as places for the growth of vegetables and fruits rather than as flower borders, and was, therefore, more concerned with the utilitarian than the artistic side of things.

In 1894 Dr. Bonavia wrote a work on the *Flora of the Assyrian Monuments*, from which we gather that the white Lily (Lilium candidum), the Lotus, and certain Daisy-like or Composite plants were in constant use. But among the sacred trees may be mentioned the Vine and Pomegranate, the Fig and Date, the Banana probably, with the Citron, as well as such non-fruiting trees as the Fir, the Cedar, and the Oak. To give details respecting each of these would be to render our work tedious, but a few of the more interesting facts may be presented. A Babylonian document gives particulars of the gardens of King Merodach, in which no fewer than seventy-two trees, plants and shrubs are enumerated. Some of these were choice and rare, having been introduced from far-distant lands. A fondness for horticulture seems to have been a characteristic of early Assyrian monarchs. One of the kings already mentioned, Tiglath Pileser I., states that he took away from the lands which he had conquered trees which no former king had planted, and put them in the parks, known as *kirali*, as in Persian they were called by the name of Paradise. "Valuable garden fruit which was not to be found in my own country (he adds) I brought away, and caused the plantations of Assyria to bear these fruits."

The name of Sennacherib is familiar to all, and it is interesting to find him, in describing the palace which he had built, stating that he stocked a great park with "all kinds of fragrant plants, fruit trees, and the produce of the mountains, and of Chaldaea." Frequent reference is made to trees with perfume, either fragrant like the sandal-wood, or bearing blossoms which were honey-laden; spices and fragrant woods for burning and making into incense were highly prized and eagerly sought after or carefully cultivated.

The most recent researches confirm what we have already learned from the earlier excavators. Reports just received from these very regions, tell of discoveries made dating back 1,700 to 2,200 years before Christ. Among these are inventories of the lands attached to a temple, with lists of the rent and tithes paid by the gardeners or farmers who occupied those lands. Little clay receipts were given for the butter and oil, the fruits, vegetables, and other produce brought in to the store-house, and thus we are brought into immediate touch with the horticulturists and florists, the farmers and herdsmen of four thousand years ago. Among the tablets found some time ago is one which gives instruction for the agriculturist respecting the times when he is to prepare and sow his fields, together with the methods to be adopted, as well as guidance in building the house and barn, with other useful information.

We learn from the Roman and Greek writers before the time of Christ and early in the Christian era much about the cultivated plants of Assyria. "Horace speaks of Assyrian nard, Virgil of Assyrian *amomum*, Tibullus of Assyrian odours generally," and though recent research shows that these were not native plants, we know that they were at least highly prized and carefully cultivated in this great land.
Hilderic Friend.

THE WILD CLEMATISES.

The large-flowered garden varieties or hybrids of Clematis are, in the main, better known and more showy than the species. The latter, however, possess a charm and beauty all their own. Though the blooms may lack the rich colour and size of those of hybrid races the dainty and varied shapes of the blossoms combined with free growth and leafage are delightful.

Second only to the Rose among hardy climbers, the Clematises thrive better than the majority of Roses in partial shade, closely confined positions, or on walls and fences that receive comparatively little if any, sunlight.

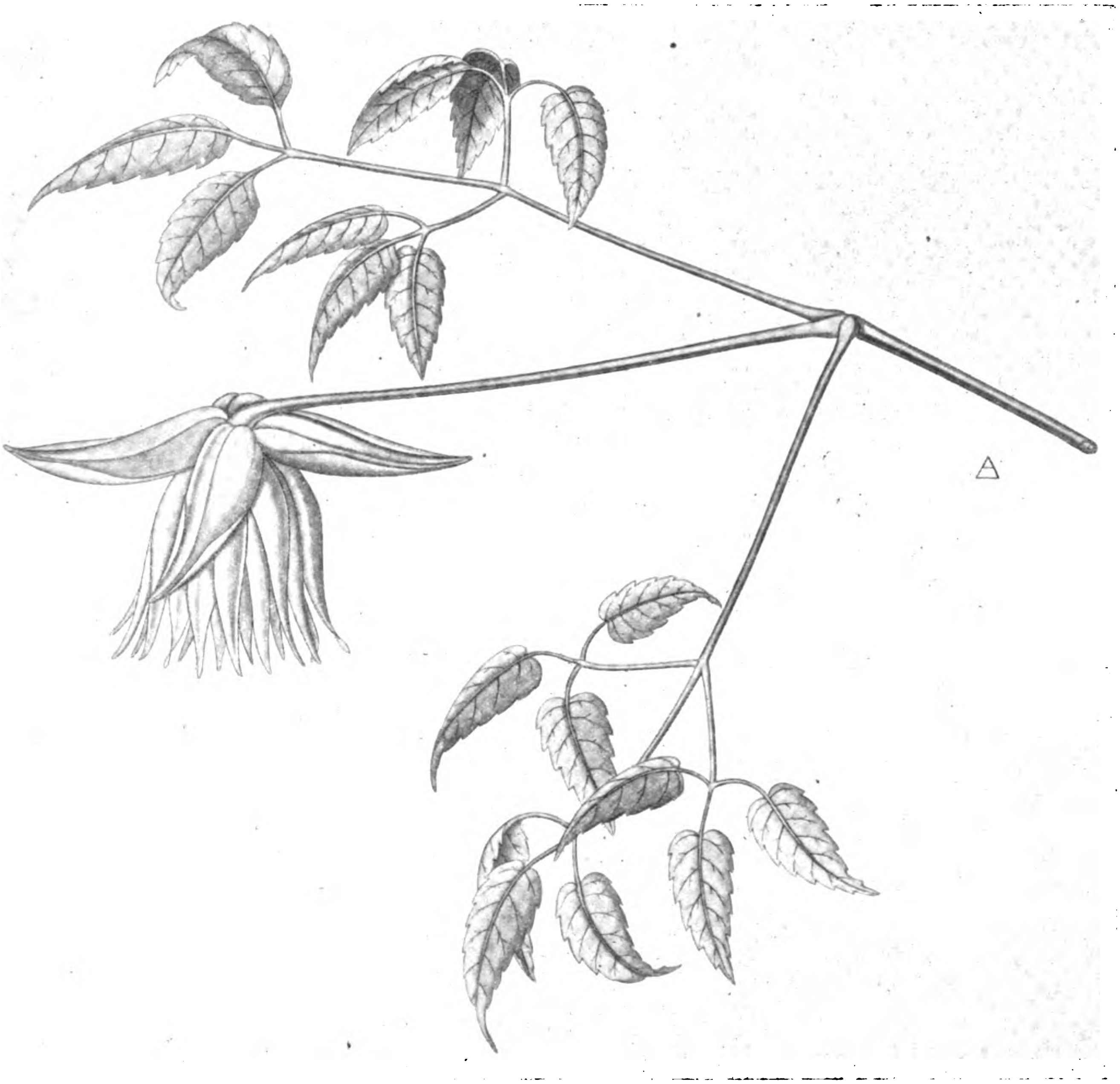

FIG. 104.—CLEMATIS MACROPETALA.

Readily propagated by seeds or cuttings, most of the species are of hardy, vigorous growth, hence we seldom hear of their sudden collapse, a not uncommon cause of complaint with the large-flowering garden varieties. In selecting positions for planting it is worth while remembering that in nature the Clematises are usually growing among trees and shrubs through and over which the long trailing growths ramble and cling. There is no better example of this than the Traveller's Joy (Clematis Vitalba) with its stems trailing in the shade and the flowering clusters developing when exposed to light and air, where they revel in full sunshine while the main branches have some protection.

Most Clematises thrive in a rich, loamy soil, to which lime, chalk or builders' old mortar rubble should be added previous to planting. As Clematises are mostly cultivated for sale in pots, spring is regarded as the best time for planting.

C. **alpina**.—A dainty species of slender, twining habit, flowering during April and May. It belongs to the Atragene section of the genus, the distinctive character of which are petal-like segments in the centres of the flowers. The blooms are nodding, the four sepals some shade of blue, the centres white. First introduced in 1792, this species is found over a wide area from the mountains of Central and Southern Europe to Siberia and eastwards to Northern China. Pea-sticks provide useful support for the slender stems of C. alpina, and as it flowers early a south-west or western aspect is desirable.

C. **chrysocoma**.—A native of Yunnan, China, this species was discovered and introduced to France by the Abbé Delavay in 1884. The late M. Maurice de Vilmorin sent the first plant to Kew in 1910. Here in the open it has proved to be on the borderland of hardiness, but with climbers such as this it is quite easy to find a warm and sheltered corner in the angle of a wall or fence. It is of fairly vigorous growth, with trifoliolate leaves and white flowers tinged with pink, one-and-a-half-inch to two inches in diameter. The flowering season is August. A little peat and leaf-mould is a useful addition to the ground when planting this species; plenty of coarse grit is also appreciated by the plant.

C. **coccinea**.—This is a native of Texas, another name for it being C. texensis, Buckl. From this habitat it is not surprising to find the protection of a warm wall or fence desirable, except in the south and west districts. The best supports for the twining stems are a few Bamboo canes or Oak Pea-sticks placed against the wall or fence. The leaves are pinnate, with four to eight leaflets. The flowers are solitary, pitcher-shaped, with the thick sepals recurved at the tips. The colour is usually scarlet but there are forms in which the colour varies from rosy-carmine to purplish red. The flowering season extends from June to August. C. coccinea is frequently raised from seeds, which are listed in numerous seed-catalogues.

C. Fargesii.—A climbing, deciduous species of vigorous growth, introduced by Mr. E. H. Wilson from Western Szechuan. It belongs to the Vitalba section. The flowering season extends from June to September. The blooms are usually borne in a one- or two-flowered axillary peduncle; they are satiny-white, two inches to two-and-a-half-inches across. In addition to cuttings seeds may be used as a means of increase, as these ripen freely.

C. flammula.—Although not a native of Britain this species was first introduced so long ago as the sixteenth century. It is found wild in Central and Southern Europe. Growing up to twelve feet or more in height, it is of ideal habit for clothing porches and arbours, producing masses of small white flowers in axillary and terminal panicles during late summer and autumn. It is the most deliciously fragrant of all Clematises, the perfume suggesting that of the Hawthorn or Vanilla. It is a variable plant, notably in the size of the individual flowers and the numbers in a panicle. Presumably the best forms are propagated by cuttings, as seedlings vary greatly.

C. glauca var. akebioides.—This is one of the half-dozen yellow-flowered species, the best known of which is C. orientalis. The var. akebioides was introduced from Western China by Mr. Wilson when collecting on behalf of Messrs. J. Veitch and Sons. It is a free-growing climber, producing yellow flowers freely in autumn. These are followed by almost equally attractive, feathery, white, seed appendages, forming globular masses two inches to three inches in diameter.

C. macropetala.—The subject of the illustration (Fig. 104) is a very pretty species belonging to the Atragene section. It was introduced by the late Mr. Reginald Farrer from Kansu, China (Farrer 315), in 1914; it is also a native of Siberia and was first described by Ledebour in 1829. This deciduous climber, of slender, elegant habit, has biternate leaves three to six inches long, with the leaflets coarsely toothed. The flowers are solitary on a stalk about three inches long, lilac in colour, two to three inches across, the centre filled with white, petal-like segments. The normal flowering season is apparently spring, though in a cold frame plants in pots have bloomed during February, while on a plant outside there were flowers open in August.

C. montana. I should place this vigorously climbing Clematis first on the list of useful species to clothe arbours, pergolas, and verandahs, also to ramble at will over the branches of trees. It should be grown in every garden; as a climber for the dwelling house on a high north or west wall the Mountain Clematis has few rivals. My memories of boyhood retain vivid recollections of the gabled north front of a cottage, thirty feet high, covered every year during May with the white blossoms of this Clematis. C. anemonaeflora is another name for the species, and quite a good descriptive one for the flowers, which are one-and-a-half-inch to two-and-a-half-inches across. C. montana is a native of the Himalayas and was first introduced by Lady Amherst in 1831.

The variety rubens introduced by Mr. E. H. Wilson from China in 1900 is undoubtedly one of this intrepid collector's most valuable contributions to our gardens. It is quite as free in growth as the type. The foliage has a distinct and attractive purplish tinge and the flowers are rich rosy-red. Selected forms of this Chinese variety, apparently obtained by raising seedlings, are given the added name of superba.

The variety Wilsoni, also introduced from China, is a summer-flowering climber with white flowers, which are larger than those of the Himalayan plant.

C. orientalis.—This elegant climber, with yellow blossoms and masses of silky hairs attached to the seeds, must be one of the oldest Clematises, as, according to Loudon, it was first introduced in 1731. It grows some twelve to fifteen feet in height, and the flowering season is August and September. Originally introduced from the Himalayas, this species or its allies—variously named C. glauca, C. graveolens, and C. tangutica and var. akebioides—are found in a wild state in the Caucasus, Persia, China, Manchuria, and the Himalayas.

C. Rehderiana.—This is a deciduous climber of vigorous habit, producing quantities of small, nodding, yellow blossoms in autumn. The leaves are pinnate, composed of from five to nine leaflets. The small, bell-shaped, Primrose-yellow blossoms are notable because of their delicious, Cowslip-like fragrance. Continental nurseries sometimes supply this Chinese species under the names of C. Buchaniana and C. nutans, but the true plants represented by these two names are natives of the Himalayas.

Allied to C. Rehderiana is C. Veitchiana, the latter distinguished by the smaller, doubly-pinnate leaflets, ten to fifteen or more, and with rather smaller flowers. Both are natives of Western China and are numbered among Mr. Wilson's many introductions of 1908, though Peré Aubert appears to have first sent home seeds to France about ten years earlier and when the resulting plants flowered they were wrongly identified with C. Buchaniana.

C. tangutica.—This is perhaps the best of the yellow-flowered species or forms of the "orientalis" section. It is free in growth with unevenly-divided pinnate leaves. The rich yellow blossoms are three inches to four inches in diameter, borne solitary on slender stalks and followed by the familiar white feathery styles. Its distribution in a wild state extends from Mongolia to Western China. The flowering season is late summer and autumn.

C. Viticella.—Another very old favourite among garden climbers, this is a native of South Europe and has been cultivated in British gardens since the sixteenth century. The average height is ten or twelve feet. There are forms with purple, blue, rosy-purple and white flowers, also one with double blossoms—var. coerulea plena. The flowers are freely borne from July to September. *A. Osborn, Kew.*

TREES AND SHRUBS.

CHOISYA TERNATA.

The Mexican Orange Flower is an exquisite, evergreen shrub, with fragrant, Orange-like flowers, and although introduced to our gardens a century ago is still comparatively little grown. This may be due to a doubt as to its absolute hardiness, but if given the right conditions it is perfectly hardy, and will withstand the severest frosts uninjured.

To ensure its successful growth this shrub should be planted in a well-drained soil and in a position protected from the north and east, as biting winds injure the foliage much more than frosts; it should also have a sunny position to ensure thorough ripening of the wood. Given such conditions, its hardiness need not be doubted, and it grows quickly, making a cheerful-looking, freely-branched bush.

The bright, glossy leaves are attractive during the whole year, and in mild seasons it is not uncommon for occasional flowers to open from December onwards. The chief floral display, however, takes place in April and May, when each terminal growth develops its cluster of dainty, white flowers, presenting a pleasing appearance and filling the air with fragrance.

Any necessary pruning or thinning of the growths should receive attention immediately after the flowering season.

Propagation may be effected by layering, or cuttings taken from young shoots may be rooted in strong heat, grown on under glass in the early stages and finally hardened and planted out.

Choisya ternata is a useful plant for forcing, and may be had in flower from Christmas onwards, when it will be found very serviceable for conservatory and room decoration.

THE CAMELLIA.

Commemorative names so abound in lists of plants that a garden may be regarded not only as a selected portion of the book of nature, but also of the book of men. A large proportion of our most valued plants are, by virtue of the familiar names they bear, living memorials of great men of the world whose names a grateful posterity would not willingly let die, and has therefore associated them with things that may be regarded as everlasting.

The Camellia commemorates the name of George Joseph Camellus or Kamel a Moravian Jesuit, who travelled in Asia two centuries ago. It was introduced to this country by Lord Petre in or before 1739, and the first plants were killed by being placed in too high a temperature.

That the Camellia is one of our grandest conservatory and garden shrubs few will deny. It displays but a shadow of its true beauty when grown as a pot plant, but has few equals for massive grandeur of foliage and floral splendour in its season, when planted out in a spacious conservatory and encouraged to grow freely with very little pruning and subjected to very little artificial heat. Indeed, the Camellia is so hardy that it may be grown in the open in all favourable spots in the southern parts of this country. As a wall plant it answers well, but it is still better situated in an open position, yet enjoying shelter with free light and air. In such positions it grows freely and flowers abundantly, and although late frosts and winds sometimes disfigure a proportion of the opening flowers, a larger proportion of blooms usually develop perfectly and produces a wealth of bright colour, charmingly displayed amongst the dark, glossy leaves. Those who were acquainted with the old gardens of the Royal Horticultural Society at Chiswick will remember how well Camellias grew and flowered on a north border protected by a glasshouse.

The cultivation of the Camellia presents no great difficulties, provided one or two essential details be given attention. The plant needs an abundance of moisture during the growing season, and should never be really dry at any time, yet it cannot tolerate anything approaching stagnation. An undrained soil will result in poor growth, naked stems, and an absence of flowers, while, if the roots are dry for any length of time, the flower buds will be liable to drop just as they should commence to open. As to soil, there is nothing more suitable than a rich, friable loam; clay and chalk are unsuitable, but a good peat answers fairly well.

Propagation may be effected by cuttings, which strike readily at almost any time, but preferably when the wood is nearly ripe towards the end of the growing season. Shoots three or four inches long inserted in small pots in sandy soil and plunged in bottom heat will root in six weeks. Cuttings made of ripe wood should be placed in a cold pit or frame until they have callused, when they may be removed to a heated pit. Layering and grafting are other methods which may be employed for the increase of this shrub. The single red Camellia may be easily raised from seeds to provide stocks for the choicer varieties. *W. Auton.*

PLANT-BREEDING FOR PRIVATE GARDENERS.

However lamentable it may be, and however distasteful to the gardener in charge of a large, private garden, present-day conditions demand that by some means the garden shall produce something which can be turned into profit to help defray the expense of upkeep.

Naturally, nurserymen do not favour plants from a nobleman's garden being sold to a public he looks upon as his clientele; the market-grower chafes under the grievance that the squire or the lord of the manor has entered the ranks of his competitors, even to the extent of sending to Covent Garden or sending round a van with vegetables, fruits, and cut flowers to supply shop keepers.

The gardener's dignity suffers, and his mind is perplexed with the problem of maintaining the establishment with a much reduced staff, and at the same time producing a surplus for the definite purpose of sale; but the whole thing boils down to this; many large establishments would have discharged their garden staffs and sacrificed their gardens if nothing from them could be sold, and that is a prospect none connected with any branch of practical horticulture would wish to contemplate.

Plant bleeding is an important, interesting, and distinctive phase of horticulture; moreover, it is, or may be made, lucrative when skill is united to business aptitude foresight, and method. Many gardeners are possessed of these qualifications, and some are placed in circumstances and environment favourable to successful enterprise in this direction.

Many instances indeed could be quoted of successful achievements in plant-breeding by private gardeners to support the proposition that the development of this special phase of the craft might afford a satisfactory means of providing finance of substantial importance, for, at any rate, some of the private establishments where the gardens are looked to for part of the funds to maintain them. There is a vast deal of difference between raising something new, which may be introduced to commerce, and merely growing everyday crops to sell in competition with small tradesmen.

The choice of subjects upon which effort should be concentrated is a matter for personal decision, subject to special facilities and conditions that may exist. Workers enough, maybe, are engaged on the popular flowering plants of the day, for season by season, new Delphiniums, Dahlias, Roses, Sweet Peas, and Chrysanthemums are introduced in bewildering numbers, and rather than to merely follow the lead, or copy the successful, the beginner in plant breeding will do well to ponder the question, "What would be an exceptionally welcome and useful production?"

There are plants which nobody appears to think of taking in hand despite the fact that everybody recognises their beauty and serviceability, and, in some cases, an observant eye may detect the hopeful possibility of responsiveness in the plant, which by its own tendency to vary evinces a restive desire to "break bounds."

Among annuals, Cosmos bipinnatus surely offers a great opportunity for valuable achievements. It is an extremely charming plant, but with two points of weakness. First, it begins to bloom so late in the season that often frost destroys the plants just as they attain a fulness of beauty; secondly, a narrow colour range includes an undue proportion of somewhat indefinite and weak shades. In regard to the first point it may be readily admitted that autumn-sowing and winter-housing of the plants will ensure early bloom, but how vastly more serviceable to the majority would be strains of rapid development and early-flowering capabilities? As for colour, the aim should be to evolve a race embracing salmon-pink, scarlet, crimson, purple, and other decisive shades, well fixed so that they may be sown as are Godetias, Clarkias, and Antirrhinums, with an assurance of a high percentage of purity.

Linum grandiflorum is a delightful flower, and it also is not without its possibilities. Twice it has given me the hint, once when an individual plant among a mass broke away from its companions, attained a height of fully two feet, and produced flowers double the normal size on substantial, much-branched stems. On the other occasion the break was in the matter of colour in all the flowers of one seedling. Only a slight colour break is sometimes necessary to pave the way for a wide and fascinating range, as witness the famous instance of the Shirley Poppy.

It is somewhat strange that since Nigella Miss Jekyll, we have had no other striking development in this quaintly beautiful annual, and the Sweet Rockets never seem to catch the plant breeder's eye.

Salpiglossis has been considerably improved, and fine strains exist, but so wonderful are the colour fusions in the flower that one feels its possibilities are even yet immense.

Among perennials, a host awaits the camel's-hair brush and the selective attentions of the plant breeder. Variations in Lythrum virgatum, and in Pentstemon barbatus indicate rewards awaiting the diligent seeker. We have seen in "Bees' Ruby" something of the capabilities of the Armerias and they should be developed. Anemone Pulsatilla once developed in Holland a cheery pink variety to enlighten us to the fact that the sombre shade of the type is amenable to brightening up. We have vastly broadened the range of the Sidalceas, but neglect Malva moschata, one of the most industrious plants the herbaceous border may contain, and for some inexplicable reason nobody appears to interest himself in an endeavour to evolve something new from Baptisia australis, itself a flower of refined beauty.

Now that we have a perfect galaxy of herbaceous Lupins it would be well worth while to turn attention to Lupinus arboreus. Some years ago that grand plantsman, John Smith, of Newry, did some good work among the Tree Lupins, but there is no reasonable ground for the supposition that the Tree Lupins should not vie with L. polyphyllus for infinite range of delightful tints.

Those who prefer to specialise in greenhouse plants have abundant material to work upon. Some erstwhile popular plants would come readily into vogue again if new varieties were raised and put into appropriate hands for distribution. We have been rather too easily content to take up the novelties raised on the Continent. The great improvements in Hydrangea Hortensia are of Continental origin, and for new Azaleas we look to the Belgians and the Dutch. We seldom see a new conservatory climber. Can nobody raise a new Lapageria, Plumbago, Passion Flower, or Clianthus?

Among bulbous and tuberous plants there are possibilities without end, the one condition, admittedly, being that a raiser may have a long time to wait for returns, but one who is imbued with the real enthuisiasm for plant breeding will devise means of bridging the interval between the start and the time when returns become possible, even though it necessitates a temporary scheme of some other kind to manage it. When once a few of the seedlings from the first crosses start coming into bloom the weariness of waiting wears away, for with fresh crosses and fresh sowings every season there will henceforward be a succession of maturing plants, and haply a prize here and there.

The great thing is to undertake the task in a systematic manner, with a definite goal or object in view, and a carefully considered plan of procedure. Admittedly some of the greatest successes in plant-breeding have been accidental as we are accustomed to say, but there can be little doubt that the really successful plant breeders are the careful, methodical workers with a direct, clearly conceived plan of campaign. The keeping of records of all crosses is decidedly essential, careful labelling, booking of dates, and all the details of work must be of immense help, whilst neglect of these points must inevitably sooner or later give cause for regret.

Among vegetables, also, there is always room for further progress. We have not yet reached the zenith of perfection in any one of our staple vegetables, whilst many of the crops we are prone to consider of secondary importance would handsomely repay well directed effort at improvement. Dwarf Peas may be instanced as an example of the right kind of work. Until recent years the dwarf varieties were invariably small, and poor in comparison with the taller, maincrop Peas, their earliness being the sole justification for planting them.

Various seed firms set themselves to the task of improving the size of pod and grain, and the cropping capabilities of dwarf Peas, with the result that the latest novelties compare very favourably with the taller kinds in regard to weight of crop produced. The advantages accruing are of considerable importance to owners of small gardens; quick maturity, economy of space, saving of expense in staking, and reducing shadow to the considerable benefit of surrounding crops.

Much benefit would similarly be derived from the introduction of a sturdy dwarf Bean of the quality of the best Scarlet Runners. A large proportion of the public prefer the Runner Bean to the Dwarf French Bean, but conditions frequently arise which render it difficult to provide stakes and adequate space for the Runners. A variety of small growth is now on the market which is content with a four foot Bamboo cane, but the Beans are small, and the crop produced is light.

Many growers contrive to dispense with staking by pinching the growths of their Runner Beans, but a genuine dwarf, upstanding variety with the pods of Scarlet Emperor would be a real acquisition.

Notwithstanding the multitude of varieties of Tomatos a hearty welcome would be extended to a really good variety which could be depended upon to mature good crops in the open. It may be reckoned that about one season in four profitable outdoor crops of Tomatos are obtained. Perseverance would be well rewarded if a robust, quick maturing Tomato for regular outdoor culture could be produced. Shall this be said to be beyond power of achievement?

Self-blanching Celery was introduced a good many years ago. It is but little grown because it is inferior to the standard types. The basis upon which to work is provided, and it would be a great stride along the road of progress if a really first-class, self-blanching Celery were produced. Many other equally desirable improvements in vegetables lie within the range of possibility, and there is scope for serviceable, interesting, and profitable work for private gardeners as well as for commercial horticulturists in the wide field of plant breeding.

The simple fact that so much of it is done by "the trade" affords ample evidence that it can be made profitable.

A. J. Macself.

NOTICES OF BOOKS.

The Enemies of the Rose.*

Who would believe that a single family of plants could be beset by so many enemies as to require a book of over one-hundred-and-sixty pages to describe them and give details of methods of combating them? However, the author, in the introduction, sounds a cheery note, bidding his readers, especially the inexperienced Rose grower, not to be alarmed by the large list of enemies described in the book, for he states that only in exceptional cases is he likely to be seriously troubled with any but caterpillars, Rose aphides and mildew. True these are the worst pests of the Rose, but we could name others that give serious concern to growers, including the red Rose-maggot, the cuckoo-spit insect, red spider, Rose rust and black spot diseases, as well as some of the leaf-eating insects.

It is most valuable to have a work of this nature dealing with the whole range of the enemies of the Rose: the book is, without doubt, the most complete work of its kind and for which the National Rose Society may indeed take credit.

The present issue is a new edition brought thoroughly up-to-date by Prof. F. V. Theobald, who deals with the insect pests, and by Mr. J. Ramsbottom, who has supervised the part dealing with diseases caused by fungi. Several illustrations in colours and a number in black and white increase the value of the book by helping the novice to recognise the various complaints which are affecting his Rose bushes. On the whole the coloured illustrations are exceptionally well executed and have been reproduced from paintings by Miss Frances Bunyard. The coloured plate of black spot disease facing page 136 is a very successful example of reproduction in natural colours and admits of a ready diagnosis of this serious complaint, which the authors state is second only in importance to mildew.

The book is divided broadly into two parts, insect enemies and Rose diseases caused by fungi, and the history of both insects and fungi are excellently well described in simple language.

Following a general account of insects, with chapters on the structure of a typical insect, respiration of insects, growth and development of insects, complete and incomplete metamorphosis of insects, biting and sucking-mouthed insects, and the orders of insects, the work proceeds to deal with those injurious to Roses, taking the beetles first. The most injurious in this class are the Rose beetle, cockchafer, summer chafer, garden chafer, weevils and Raspberry beetle, all of which are described, and remedies given for their destruction. Then follows accounts of bees and sawflies injurious to Roses, of moths injurious to Roses, of flies injurious to Roses, and the aphides, scale insects,* frog-hoppers and leaf-hoppers, concluding with thrips and red spider.

Of all these pests the most ubiquitous is the aphis or green fly and it is stated that no fewer than nine distinct species of aphides trouble our Roses. Those who are surprised at the suddenness with which their Rose bushes become badly infested with aphides will learn on page 75 how this comes about. Aphides are not, as was at one time commonly supposed, bred spontaneously, but result from the off-spring of mother queens which reproduce at an enormous rate, so that in a day or two hosts of young aphides are bred and these in turn reproduce as prolifically. Eggs of aphides are present on stems, leaves, etc., all the winter, and when the mother queens hatch from these asexual reproduction commences and gives rise, not to eggs, but to living young. The aphides may infest other plants besides Roses, and migration often accounts for the sudden disappearance of the aphides from Roses and their equally sudden re-appearance in the autumn. With regard to treatment, nicotine wash is recommended as the best insecticide, used in conjunction with soft soap; three-quarters to one ounce of ninety per cent. nicotine and two ounces of soap to ten gallons of water. Soft soap has the effect of blocking the breathing pores of the insects and it serves as a useful holder of such poisons as nicotine and Quassia extract. Soft soap and Quassia wash is an old and safe remedy for aphis and some gardeners maintain that Quassia extract is the best of all specifics for the destruction of aphis on all kinds of plants.

The frog-hopper or cuckoo-spit does very considerable damage to Roses in some years, and it is not an easy matter to destroy these creatures, as they are secreted in a frothy substance which they exude. Spraying to destroy the frog-hopper must be done vigorously and the authors recommend nicotine washes as being the most effectual.

The chapter on washes used for Rose trees shows the proper proportions of each material to use, giving handy formulas and directions for compounding them.

In the section on fungous disease, one naturally turns to the chapter dealing with mildew first, for this is the most serious complaint of the Rose and spoils the plants even sooner than aphides. Mr. Ramsbottom gives the fullest particulars of the fungus, how it increases by spores and how the disease is carried over the winter by the perithecia or sexual stage of the organism and how in spring the ascus within the perithecia liberates the ascus spores, which are able to infect any Rose leaf or any young stem on which they happen to alight. He informs us that there is a great difference in the susceptibility of various Roses to mildew, and here we think it would have been very valuable to cultivators if some practical grower had given us a list of Roses most susceptible to mildew and others that are mildew-proof, also observations from the growers' point of view as to the conditions which favour the spread of this complaint, with particulars as to the best positions for susceptible varieties and other general hints which are only gained as a result of practical experience. With regard to the treatment for mildew, dusting with flowers of sulphur for ten days is recommended, but yellow-sulphur makes Rose bushes very unsightly and we are surprised that the use of black sulphur is not advised.

A fungicide which is said to have none of the drawbacks attending the use of powdered sulphur is the following: three-and-a-half pounds hyposulphite of soda dissolved in one gallon of hot water, three-and-a-half pounds of bisulphate of soda also dissolved in one gallon of hot water and two ounces of glue in three pints of hot water. The glue solution is stirred into the sodium hyposulphite solution whilst it is still hot. This and the sodium bisulphate mixture are each diluted with five gallons of water, mixed, and allowed to stand from three to eighteen hours, when the specific is ready for use. The mixture will keep for a few days, but it is best used on the morning following its preparation.

Black spot disease calls for special vigilance on the part of the grower, as from the time of the first infection to the production of a new crop of spores only about a fortnight elapses. Checking the fungus on its first appearance may be done by spraying the young leaves with Bordeaux mixture, ammoniacal copper carbonate, or liver of sulphur.

With regard to Rust disease, which is very prevalent in some districts, we know from experience that this is very easily controlled by spraying with permanganate of potash, one of the cheapest and easiest of all fungicides to use. A little soft soap added to the solution, which need only be made a rose-red colour, makes it very efficacious.

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* *The Enemies of the Rose.* By Fred. V. Theobald and John Ramsbottom. National Rose Society, 28, Victoria Street, S.W.

POTATO BREEDING.

In your issue of March 21 there appears a commentary on the above subject by Mr. George M. Taylor.

It should be pointed out that within the last decade two factors have influenced the work of Potato breeders, viz.: (1) The spread of Wart Disease and the discovery of immunity to that trouble; and (2) the recognition of the various virus diseases and their detrimental influence. Previously the breeder made selections from the total of his seedlings. Now, however, selections are made from a limited number of seedlings. At the present time no new variety will make much headway unless it is immune to Wart Disease and tolerably resistant to the virus diseases. Research on the inheritance of immunity has, however, to some extent alleviated the position. For some time after the discovery of immunity to Wart Disease, breeders seem to have been content with the production of immunity alone, other considerations, notably quality, being regarded as of secondary importance. It would appear therefore that the seeming futility of breeding is more apparent than real, and with the enormous importance which has been attached to immunity, it is not to be wondered at that the other points of an ideal Potato have been neglected to some extent.

Messrs. Mair and McAlister are deserving of great credit for their selection of Great Scot from a batch of seedlings produced from seed supplied by Mr. Ezra Miles. Great Scot has many virtues and few defects. In its class it is as yet unsurpassed. It is not, however, impossible to conceive of an early maincrop variety with better cropping power and greater disease resistance. I have already pointed out that some varieties make better parents than others. Great Scot is presumably extremely heterozygous, and in consequence might not make a good parent unless a very large number of seeds were used.

I am aware that there are numerous breeders who send worthless seedlings to the official testing stations. Feeble efforts, however, do not condemn a system.

Mr. Taylor seems to be at one with me in believing that sexual reproduction affords the only means of progress in the Potato—apart from methods of cultivation. On the other hand, he considers that some species other than S. tuberosum must be used for crossing, as, in his opinion, we are in a vicious circle. I do not believe this to be the case. If Potato varieties are viewed as a whole, it will be recognised at once that we have all, or practically all, the merits we desire. The only disadvantage is that these merits are distributed over a large number of varieties, but never in sufficient number in one variety. The problem is how to combine these in a few varieties. This can only be done by someone who is an artist in the profession. Moreover, even an artist cannot hope for success except, of course, as a piece of phenomenal luck—*unless he works with a very large number of seedlings* and is not afraid to use his own meritorious seedlings as parents.

What can we expect from the assimilation into the Potato of wild Solanum blood? Is it seriously suggested that the use of these wild species will increase the yield of the common Potato? Can Mr. Taylor state the results of any tests which have been made to determine if the wild forms are more resistant to specific diseases than some of our existing varieties? In the common Potato we have varieties which are highly resistant to late blight, varieties immune to Wart Disease, one variety immune to common scab, and, I believe, immunity or at least high resistance to virus diseases will be obtained without stupendous efforts. It is merely a matter of time until someone will produce a first early variety with the cropping capacity of Epicure, with a finer tuber and probably with other virtues thrown in. Similarly, a maincrop equal to Up-to-Date, but immune to Wart Disease and less susceptible to late blight, will undoubtedly appear on the market in due course. There is certainly a limit in Potato breeding, but that is by no means reached; apart from general improvement, something might be done by way of producing varieties suitable to certain conditions. When, however, the limit is reached, further increases in yield may be obtained in other ways. In this connection Popoff's "cell stimulation" theory is suggestive.

A "bolter" differs from the varietal type in its greater height, its larger internodes, its coarser tubers, its later maturity, and its greater capacity for flower bearing. In some varieties the "bolters" frequently bear berries when the normal type does not, *e.g.*, Ally. Generally the "bolter" is more pubescent than the normal plant and, it would seem, less susceptible to late blight. "Bolters" are not readily distinguishable from typical plants of a variety until the stage of full growth is reached. Owing to their later maturity it would be foolish to select "bolters" with a view to improving stocks of early varieties.

It is impossible at present to state how "bolters" arise. They constitute variations in the varietal habit which appear permanent under vegetative reproduction. They are quite recognisable as belonging to the variety from which they have sprung, but their deviation from the normal is not considered sufficiently great to enable them to be regarded as mutations. They arise in many varieties, and the differences which they show from the normal type are usually the same in nature and degree. No evidence has been produced to indicate that they are due to disease and they may be regarded as growth forms. The Potato tuber is a shortened, thickened, shoot system, hence its use corresponds to that of cuttings in trees and shrubs. No doubt Mr. Taylor will be aware that in certain plants cuttings from different parts of the plant do not all reproduce identical forms. It may be that "bolters" and "wildings" have their origin in some such way, but this is mere conjecture; definite statements will be made when definite facts are available.

Mr. Taylor, in his last paragraph, refers to the susceptibility of early varieties to foliage diseases. I agree with him concerning late blight; not so, however, with other diseases. Epicure is one of the most resistant of all varieties to virus diseases. Such a correlation as Mr. Taylor suggests does not exist. *Thomas P. M'Intosh.*

THE STUDY OF MOSSES.

The Mosses are cryptogams that possess only imperfect vascular tissue or none at all, and are thus considerably lower in the natural system than the Ferns. The leafy plant of a Moss is the sexual generation, and the fruit is concerned only in the production of spores. The stalk of the fruit has a foot which pushes into the stem of the mother plant, feeding upon it like a parasite. A Fern, on the contrary, is the spore-bearing, leafy plant, while the spores give rise to a prothallus, which is the sexual generation, and as a rule, short-lived. The spores of Mosses give rise directly to the leafy, Moss plant. Mosses vary greatly in size, from Polytrichum commune, which may be twelve inches long or more in boggy situations, to others only a quarter-inch long or less. They occur in all sorts of situations, from wall tops to bogs, dry heaths, shady woods, hedge banks, hills and mountains. Three hundred species have been found on Ben Lawers alone. They fruit at various times of the year, according to the species, though Dicranium scoparium may fruit in winter, spring, or summer.

The fruit of a Moss consists of a stalk, a theca or capsule, an operculum or lid, a peristome of teeth or fringes, and a calyptra or cap, like an old-fashioned night-cap. The number of teeth varies greatly, but is mostly of some multiple of four. Thus, the peristome of a Polytrichum may have thirty-two or sixty-four teeth in the outer row, and a membrane inside these, the peristome being double. Needless to say, a compound microscope is necessary for the study of Mosses to ascertain these minute particulars, the shape and structure of the leaves and cells. The leaves being only one cell thick they can be studied in the dry state in winter or any time by putting a piece in a saucer of water to expand and freshen up the tissues. A modern, illustrated book is necessary, for the species are more numerous than at the beginning of the last century, many genera have been split up into several, and the study of the subject has been brought to greater perfection.

These notes have been suggested by a collection of Mosses sent from the district of Dartmoor, Devon. None of them is particularly rare, but all of them were beautiful. Four of the number were Sphagnum cymbifolium, a species of Bog Moss, with boat-shaped leaves, as the specific name implies. The leaves may be pale green, white or red according to age or the conditions of growth. The most handsome, perhaps, is Thuidium tamariscinum, with bright, green foliage and much-branched, leafy stems, comparable to those of a Tamarisk. The greenish-yellow leaves of Dicranium scoparium constitute the beauty of this species, because of their length and hair-like fineness. Two specimens consisted of D. s. paludosum, which usually grows in wet places. The yellow-green leaves of Hylocomium loreum, shining like glass, are just sufficiently open at the base to show the bright, red stems. The tall stems of H. triquetrum are branched at the top, green on one side, and reddish-brown or black on the other.

The Hair Mosses (Polytrichum) are easy to recognise by their long, hair-like leaves and erect, unbranched stems, growing in dense, and usually broad, patches. Only P. formosum, about three inches high, was included in this collection. Hylocomium flagellare has the leaves so closely invested, the one into the other, as to resemble whip-cord. The species of Mnium have broad, flat, or undulated leaves, so like a Filmy Fern (Hymenophyllum) that some of the taller ones are liable to be mistaken for H. tunbridgense at first sight in a shady place. M. punctatum only was sent. Pterygophyllum lucens was in fruit, and the broad leaves glistened like corrugated glass. The stems of Plagiothecium undulata were completely covered by greenish-white leaves, flattened more or less in four rows, like some of the Selaginellas. Hypnum is a large genus, now split into several, and this collection included the easily identified H. Schreberi, a yellow-green leaved species. Included with the Mosses were two Hepatics, Scapania undulata and Pellia epiphylla, related to the Mosses. *J. F.*

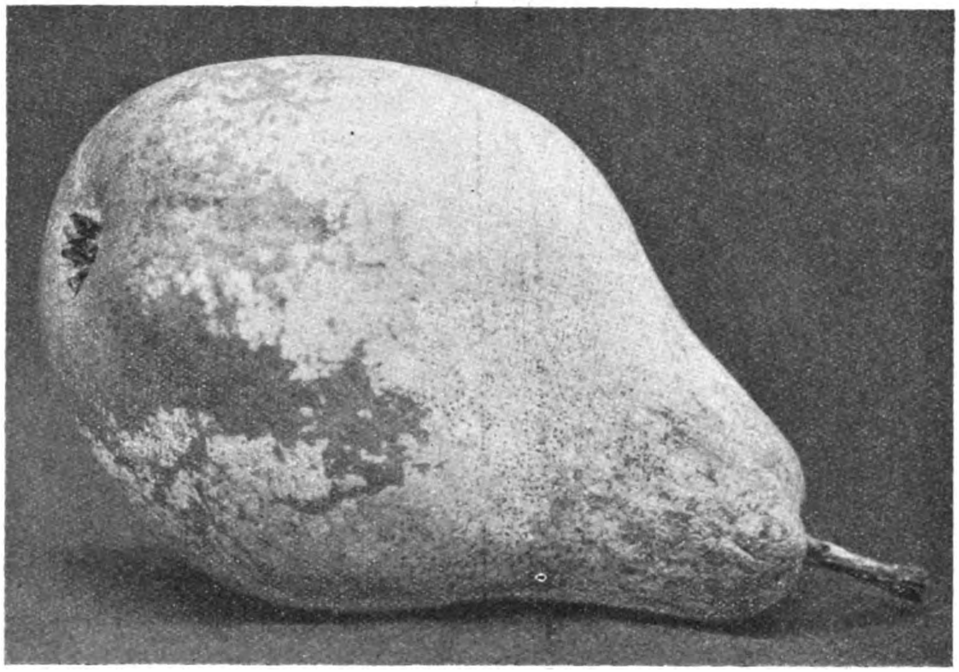

FIG. 105.—PEAR COMTE DE PARIS.

FRUIT REGISTER.

PEAR COMTE DE PARIS.

The severe judgments passed by Mr. Blackmore and quoted in Hogg's *Fruit Manual* must have deterred many from trying some of the lesser known Pears. It requires some courage to grow a fruit which is "worthless at Teddington." In this class comes the variety under consideration, of which Mr. Blackmore said, "It is very poor here". When, however, we note that Comte de Lamy was also "not worth growing" we realise that perhaps Teddington may not have provided the best of soils for Pear growing.

The variety Comte de Paris (Fig. 105), was one of the last seedlings of Von Mons, and first fruited in 1847. It is rather largely grown in Belgium and Holland, and I have there tasted fruits of very good quality. It is extremely prolific and hardy, and it is a variety which, I think, should be tried again in England. The fruit figured comes from a pot tree; the outdoor fruits will not be quite so big. The variety is in season from October to December. *E. A. Bunyard.*

HOME CORRESPONDENCE.

Carnation Baroness de Brienen.—After reading the many remarks which have appeared concerning Carnation Baroness de Brienen, I venture to add that I have always found it a good variety at all seasons. As it is slow growing it can be made perpetual-flowering by close study of the stopping. To produce flowers of this variety in mid-winter the last stopping should be done by the end of May or early in June. *H. Cunningham, The Gardens, Bishop's Hall, Romford, Essex.*

Magnolia pumila.—Referring to your note upon Magnolia pumila (page 192) I beg leave to state that this plant is growing in an intermediate house here. I brought a specimen home after a recent visit to India. It grows in the open at Poonah, but I am doubtful if it will be hardy in this country, though I understand this is being tested at Kew at the present time. Magnolia pumila is a low-growing plant and should be useful to the hybridist because, as you state, it flowers almost continuously. *Stuart M. Samuel, Bart., Chelwood Vetchery, Nutley, Sussex.*

Apple Leaf Scorch.—In my note on this subject (p. 242) one or two important words were, unfortunately, omitted. The eleventh line down, instead of reading "received no nutrient solution," should read "received no potash in the nutrient solution. *Market Grower.*

Bees and Apple Fertilisation.—My own experience—and I am sure that of many of your readers is the same—is that as regards standard trees in grass orchards, hive bees are of little service for pollination. When the weather at blossoming time is warm and quiet, an abundance of insects of many kinds will be found in the flowers, but should a cold wind be blowing, hive bees may usually be found in plenty gathering pollen from Aubrietia, Arabis and other dwarf plants, the fertilisation of the Apple blossom being left to the queens of various species of humble bee, which work exceedingly hard in spring-time and may be seen flying freely when no hive bees are abroad. Dwarf trees—particularly those in sheltered gardens—undoubtedly get a larger share of attention from the hive bee than do standard trees, and wall trees are still more favoured, while it would not be easy to overrate the good work done by these insects among Gooseberry, Currant and Raspberry blossom. I, at least, have no prejudice against bees (see Mr. C. H. Hooper's letter on page 225), for I kept a sizable apiary for many years, and found it exceedingly interesting and reasonably profitable. Nor do I think that there are many fruit-growers who would dispense with the services of bees if they thought the insects would be of appreciable help in fertilising their fruit blossom. Strains of bees have been bred for honey-producing and, latterly, for their ability to withstand Acarine disease, but it does not appear to have occurred to anyone to try to work up a hardy strain which would be less susceptible to bad spring-time weather. Undoubtedly the old English black bee and the for-ever-swarming Dutch breed get abroad more in spring than do Italian stocks, and, since it is their services as blossom-setting agents that are most wanted by fruit growers, this fact should be borne well in mind. *Sussex.*

SOCIETIES.

GUILDFORD AND DISTRICT [GARDENERS'.

A very successful series of winter lectures arranged by this Association closed with one by Mr. F. J. Chittenden on March 17.

In opening the meeting, The President, Alderman W. T. Patrick, J.P., who presided, spoke of the continued progress of the Association which now has some six hundred and fifty members. He also referred to the latest venture of the Association, the publication of a monthly journal as a means of disseminating information amongst the members, and keeping the aims and work of the Association prominently before the public.

Mr. Chittenden lectured on "The Essentials of Vegetable Cultivation." Avoiding technicalities, the speaker dealt with his points in homely terms. He emphasised the importance of deep digging and bastard trenching. He advocated the use of manures—stable dung, if it can be obtained—and told his audience to purchase the best quality seeds and to sow them, not as a slave to the calendar, but when the soil is in a suitable condition.

INSTOW SPRING FLOWER SHOW.

The Instow (North Devon) Spring Flower Show is one of the few exhibitions managed successfully without the encouragement of prizes. The idea of such a show occurred to Miss K. M. Hinchliffe of Worlington House, Instow (see *Gard. Chron.*, April 19, 1924), and under her enthusiastic management the show has steadily increased in extent and interest. The show held in the Rifle Hall on March 25 was the fifth and best of the series, and Miss Hinchliffe is to be congratulated upon the fine display obtained. There are no entrance fees, no judging, and no prizes, but exhibitors were obliged to send in their entries to Miss Hinchliffe by March 21. There is a charge for admission to the show and all profits go to the Rifle Club.

The early date prevented the Rev. T. Buncombe, of Black Torrington, from exhibiting, and Mr. T. Batson, of Beaworthy (also in a cold neighbourhood), could only send one exhibit, a nice, little, lemon-yellow seedling from N. obvallaris called Cymry. Mr. Seymour Cobley, Bideford, exhibited a magnificent group of Daffodil seedlings, including Magnolia, Tunis, Pedro, Daphne, and about eighteen others, which could not have been surpassed for quailty at Birmingham or Vincent Square. From Instow Miss Hinchliffe displayed forty-seven sorts of Daffodils, "first and second earlies," including King Alfred, Maximus, Golden King, Peter Barr, Alice Knights, Juliana, Homespun, Princess Victoria, Queen Sophia, Lucifer, Flame, Circlet, Mohican, Lord Kitchener, Irish Pearl, Mermaid, Argen, three Tazettas, and three Poeticus (praecox grandiflorus, Homer, and ornatus).

Mrs. Dodd, Instow, exhibited three dozen good varieties including Noble, Golden Rose, Vanilla, Albatross, Lord Kitchener and Southern Gem, and Mr. C. F. T. Hinchliffe, Hillsleigh, Instow, displayed about twenty sorts, including Firebrand, Bernadino, Autocrat, Sunrise and Mermaid.

The groups of greenhouse plants were the best yet put up at this spring show and reflected great credit on Instow gardeners; they included Arums, Cinerarias, Pelargoniums, Deutzias, Primulas of sorts, Schizanthus, etc., and some lovely plants of Bilbergia nutans, shown by Col. Evatt, Instow. The exhibitors in this section included Lady Couchman, Laventon, Instow; Miss Hinchliffe, Mr. C. F. T. Hinchliffe, Mr. T. Jennings, and Mrs. Dering.

The earlier date fixed permitted a larger display of bulbs grown in fibre, and Mr. A. Kelly submitted very good Hyacinths, while Mrs. Evatt and Miss Harding exhibited Daffodils. Among other outdoor grown flowers, besides Daffodils, there were good exhibits of Primroses, Polyanthus, blue, red yellow, purple, and Primula species by Miss White-Atkins, Mr. Hoyles, and Miss Hinchliffe; also Anemones, Tulipa florentina. Grape Hyacinths, other Hyacinths, Triteleias, Hellebores, etc., by Mr. T. Jennings, Mr. C. F. T. Hinchliffe, and Miss Hinchliffe.

Few flowering shrubs were shown, but Lady Couchman, put up a small group. It being a bad year for keeping Apples, only one good exhibit of six sorts was displayed by Col. Evatt.

The show was well attended and evoked unstinted admiration.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, April 3rd. — *Committee present:* Messrs. R. Ashworth (in the chair), H. Astley Bell, A. Burns, A. Coningsby, J. Cypher, J. Evans, G. Giles, A. Keeling, J. Lupton, E. W. Thompson, and H. Arthur (Secretary).

First Class Certificates.

Odontoglossum Crimson Morn. (*parentage unknown*).—A round flower, densely spotted with crimson on a pink ground. From S. Gratrix, Esq.

Odontioda Zenobia var. Rouge Dragon.—A well-shaped flower of reddish-chocolate colour with a large, flat lip; the tip of the column is white. From A. Hanmer, Esq.

Brasso-Cattleya Vilmoriana, Rutherford's variety. A large flower of even colour; the large, round lip has a bright yellow throat. From Col. Sir J. Rutherford, Bt.

Awards of Merit.

Odontoglossum crispum Antinous; O. Dicture (*amabilis × Her Majesty*); and *Cattleya Douaii var. Imperator.* From A. Hanmer, Esq.

Cypripedium Cardemona var. Beta (*carola × Desdemona*). From P. Smith, Esq.

The Secretary informs us that the Oncidium exhibited by J. McCartney, Esq., at the last meeting (see p. 228) has proved to be the rare Oncidium chrysodipterum, and has been recorded as Oncidium chrysodipterum, Hey House variety.

Groups.

S. Gratrix, Esq., West Point (gr. Mr. C. Branch) staged a group for which a Silver-Gilt Medal was awarded.

A large Silver Medal was awarded to A. Hanmer, Esq., Buxton (gr. Mr. G. Giles), for a group in variety.

Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns), were awarded a Silver Medal for an exhibit of Orchids.

Messrs. J. Cypher and Sons, Cheltenham, staged a group to which a Silver Medal was awarded.

ROYAL HORTICULTURAL.

April 7 and 8.—Although the hall at Vincent Square was not so well filled with flowers and plants, nor so crowded with visitors as on recent occasions, there was, nevertheless, a fine exhibition in which Orchids figured prominently. Daffodils and hardy flowers, Cinerarias and Carnations, Roses and forced flowering shrubs were other interesting features. Some idea of the quality of certain displays may be gathered from the fact that the awards recommended included three gold medals.

Orchid Committee.

Present: Sir Jeremiah Colman (in the chair), Mr. Gurney Wilson (Hon. Sec.), Sir J. Rutherford, and Messrs. R. Broman White, C. J. Lucas, H. T. Pitt, S. W. Flory Arthur Dye, H. G. Alexander, Fred. K. Sander, J. G. Shill, Chas. H. Curtis, J. C. Cowan, A. McBean, T. Armstrong, E. R. Ashton, and J. Wilson Potter.

AWARDS OF MERIT.

Odontoglossum Clodagh (*Lakinae* × *Nathaniel*). A distinct novelty with large flowers of fine form. The chief colour is rich chocolate-red, rendered the more effective by irregular, vein-like markings of white, and white, mauve-tinted tips. The lip is broad, white with yellow crest and deep red markings. Shown by R. GERRISH, Esq. (gr. Mr. Sorrell, Salisbury.

Odontoglossum Cordoba (*eximium* × *Doris*).—The plant of this showy hybrid carried eleven flowers of excellent size, form, and substance, arranged in pleasing fashion on a sturdy spike. The rounded blooms are deep red, margined with blush white and fringed along the edges. Lip white, with an irregular red blotch and a yellow crest. Shown by R. GERRISH, Esq.

Cymbidium Vesta var. Thelma (*Alexanderi* × *insigne Sanderae*).—A lovely Orchid, with large rounded flowers, well expanded and admirably displayed on the spike. The colour is warm rose pink, slightly deeper at the margins of the sepals and petals. The lip is pink with deep crimson spots and a yellow crest. Shown by Messrs. J. and A. McBEAN.

GROUPS.

A beautiful group of Orchids was contributed by R. GERRISH, Esq., The Manor, Milford, Salisbury. This was also an extensive exhibit and contained grandly grown specimens of Cymbidium Pauwelsii, C. insigne roseum, Odontoglossum Mercier, O. Eulalia (very fine), O. crispum var. Sarem, O. majesticum Gerrish's var., O. crispum Xanthotes, O. Pescatorei, Odontioda Genadier, O. Gwendoline, and O. Vuylstekeae. There were many other grand plants representing these genera, besides Cattleya Douai, C. Cowaniana alba superba, Brasso-Cattleya Apollo. B.-C. Cliftonii magnifica with three gorgeous flowers, Laelio-Cattleya Hassellii alba and some Dendrobiums. Not only was every plant a fine one but all were admirably displayed in a setting of Moss and Ferns. (Gold Medal.).

The exhibit shown by H. T. PITT, Esq. (gr. Mr. Thurgood), Rosslyn, Stamford Hill, was, as usual, full of interest, for in addition to good Cymbidiums, Odontoglossums, and Odontiodas, there were examples of Angraecum sesquipedale, Maxillaria Sanderae with three of its quaintly attractive flowers; Epidendrum Endresio-Wallisii, Masdevallia triangularis, the rare Dendrobium Ashworthiae, and D. Griffithianum. (Silver Banksian Medal).

Messrs. CHARLESWORTH AND CO. exhibited a group of fine plants in which hybrid Odontoglossums figured freely. A few of the leading subjects were Odontoglossum citrinum with two long spikes, several superb forms of home-raised O. crispum, O. eximium Xanthotes, O. Syriax, and O. Crethus. Miltonia Wm. Pitt carried four fine blooms, and Laelio-Cattleya G. S. Ball was prominent with its brilliant orange-yellow flower. Other good things included Brasso-Cattleya Oberon, Odontioda Bradshawiae, O. Charlesworthii, and Sophro-Laelio-Cattleya Anzac carrying six splendid blooms. (Silver-Gilt Banksian Medal).

Messrs. J. AND A. McBEAN contributed the outstanding exhibit on this occasion. Theirs was a grand display and the plants were put up in a delightful fashion, so that each was seen to advantage, and all combined to produce a beautiful effect. Cymbidiums and superb spikes of Odontoglossums formed the centre and background, while choice Odontiodas, Odontoglossums, Laelio-Cattleyas, and Cattleyas formed the body and foreground of the display. We have space only for the names of a few outstanding plants:—Laelio-Cattleya Warnhamensis, Brasso-Cattleya Leemaniae, B.-C. Alexandrina, B.-C. Cliftoni magnifica, Cattleya Cowaniae alba, Adaglossa ourantiaca, Odontoglossum crispum in grand form, O. Pyramus, and Oncidium McBeanianum (Gold Medal).

Some large Cymbidiums were somewhat thinly displayed, with Odontoglossums by Messrs. SANDERS. Capital kinds were C. Garnet var. Amethyst, C. Pauwelsii, C. Ceres in variety, C. Seamew, C. Joy Sander, with Oncidium barbatum, O. Papilio majus, Odontoglossum Queen Alexandra, and Pholidota ventricosa (Silver Banksian Medal).

Mr. H. DIXON Wandsworth Common, showed large plants of Brasso-Cattleya Digbyana Mendelii, and B.-C. Albion, with a few choice seedling Odontoglossums, and a bright unnamed Sophro-Cattleya (Bronze Banksian Medal). Messrs. COWAN AND CO. showed a few choice Odontoglossums and Odontiodas, and Messrs. FLORY AND BLACK contributed Laelio-Cattleya H. T. Pitt var. superba carrying grand blooms.

Floral Committee.

Section A.—*Present*: Messrs. H. B. May (in the Chair), Arthur Turner, H. J. Jones, J. M. Bridgeford, W. Howe, M. C. Allwood, F. Streeter, F. G. Cousins, G. W. Leak, D. B. Crane, Chas. E. Pearson, J. B. Riding, and W. Cartwright (Secretary).

Section B.—*Present*: Mr. Chas. T. Musgrave (in the Chair), Sir Wm. Lawrence, Messrs. W. J. Bean, G. Reuthe, W. B. Cranfield, R. C. Notcutt, F. G. Preston, E. A. Bowles E. H. Wilding, and Clarence Elliott.

AWARDS OF MERIT.

Primula malacoides Golden Eye.—This elegant and dainty development of a well-known species cannot fail to become a popular greenhouse plant. It is free-flowering and has much larger flowers than those of the type and these have longer pedicels, with the result that the spikes have a better furnished appearance. A well grown plant carrying half-a-dozen spikes is very pleasing. The flowers are white, with a small, golden eye. Shown by Messrs. JAS. CARTER AND CO.

Primula Barbara Barker.—A dwarf free-flowering variety obtained by crossing P. Linda Pope with P. Zulieka Dobson. The leaves are stiff, light-green, much narrower than those of an Auricula. The flowers are large, of finely rounded form and carried in a fairly large head. They are clear bluish mauve with a narrow white ring around the eye. Shown and raised by Mr. CLARENCE ELLIOTT.

Carnation Shot Silk.—This large and showy variety was described in our issue of April 4 and figured on p. 241. Shown by Messrs. ALLWOOD BROS.

Rhodothamnus Chamaecistus.—This procumbent rock-garden shrub was introduced from the Austrian Alps in 1786. It thrives best in full sunshine when the roots can penetrate to a cool, moist soil. The small elliptical leaves are nearly stemless and margined with conspicuous bristles. The terminal clusters of from two to four flowers are of clear rose-pink colour, fully expanding and rather more than an inch in diameter. The prominent filaments add to the attractions of the shrub, which, under congenial conditions, is exceedingly floriferous. Shown by Mr. CLARENCE ELLIOTT.

Lachenelia glaucescens?—In this plant the flowers are more or less erect on the spike instead of being spreading as is the case with L. Nelsonii and other garden forms. They are transparent, greenish-white with yellow colouring on the inner segments. The strap-shaped leaves are deep green with small dull chocolate or maroon spots. Shown by the Rev. J. JACOB.

GROUPS.

The high quality, as well as the quantity, of the exhibits of Roses, augurs well for the success of the spring show of the National Rose Society which is to be held later in the month. The variety Roselandia which has been shown by Messrs. STUART LOW AND CO. last year on various occasions, again received a deal of well-deserved attention. It has a most shapely bud borne on long stout stems and the rich orange-yellow colour becomes tipped with the palest Primrose at maturity. An unnamed pink H.T. Rose, also shown by Messrs. STUART LOW AND CO. possesses much more than average merit. Here again the buds are of delightful form while the colouring is a fascinating shade of rich pink.

An excellent collection of cut Roses, well set up by Messrs. BEN R. CANT AND SONS, included several sterling novelties. Diana might well be described as being a double-flowered Isobel, as it possesses the rich, warm colouring and breadth of petal of that popular variety. Mrs. Beattie is a fully double H.T. of splendid form, rich fragrance, and real Maréchal Niel colouring. The long stems carry the blooms well. Lady French, another shapely H.T. variety, is of good size and Souvenir de la Malmaison Carnation colour, with delicate sweetness. (Silver Banksian Medal.)

Such well-known H.T. varieties as Chas. E. Shea, America, Madame Butterfly, Betty Uprichard and Ophelia were splendidly shown by Mr. ELISHA J. HICKS. Not only were the blooms of exceptional size, but their colours were unusually bright. (Silver Banksian Medal.)

In a corner group, Messrs. A. J. AND C. ALLEN displayed magnificent plants of such climbing Roses as Havering Rambler, Excelsa and White Dorothy, rising above large vases of Mrs. Beckwith, Maud Cuming, America, Betty Uprichard, and other valuable sorts. (Silver Banksian Medal.)

Messrs. WM. CUTBUSH AND SONS associated various Polyantha Roses with their exhibit of flowering shrubs.

An exceptionally fine strain of Primula obconica was shown by Mr. W. J. JENNINGS, The Mental Hospital, Napsbury, St. Albans. The splendidly-grown plants were dwarf and floriferous, carrying big trusses of large blooms. In every instance the yellow or golden eye of the flowers was very pronounced. The chief varieties were Crimson King, a particularly valuable and distinct variety, Fringed Pink, Giant Pink, Dark Wedgwood, of lovely blue colour; Sir Knight, bright rosy-mauve; Lilac Time, delicate mauve petals and a yellow eye. (Silver Banksian Medal.)

In a floor group, Messrs. SUTTON AND SONS displayed Cineraria stellata Feltham Beauty. This is an admirable strain of dwarf, spreading plants bearing large heads of graceful flowers in a variety of charming colours. (Silver Banksian Medal.)

Besides their Roses, Messrs. STUART LOW AND CO. staged some particularly good plants of Hippeastrum, various Mimosas (Acacias), Camellias, Azalea indica varieties, and Boronia megastigma. (Silver Banksian Medal.)

In an adjoining group, Mr. G. H. DALRYMPLE set up a great many of his coloured Freesias in order to illustrate their special value as cut flowers. Many of them were seedlings, but the collection also contained the rich, yellow, Goldfinch, Old Rose, Bluebeard, Buttercup, Cream Cheese, and Mouette. (Silver-gilt Banksian Medal.)

Greenhouse Carnations were again very well shown by Messrs. ALLWOOD BROS. and by Mr. C. ENGELMANN (Silver Banksian Medals). The former included their new Master Michael Stoop and Beauty of Durham, a vivid rose cerise variety. Chief amongst Mr. ENGELMANN'S varieties were Mrs. Hamilton Fellowes, Gipsy and Red Laddie.

A well arranged group of forced shrubs was exhibited by Messrs. L. R. RUSSELL, LTD. In the foreground two groups of Azalea Hinodigiri provided massed colour of great effect. Wistarias, Pyruses, Laburnums and Clematis, Marie Boisselot, C. Crimson King and C. Lasurstern were also well worthy of special mention (Silver Banksian Medal).

A number of new Chinese Rhododendrons were included by Messrs. HILLIER AND SONS in a very interesting collection of hardy shrubs. These Rhododendrons were mostly of the dwarf, free, small flowered type. The chief, R. megeratum; blush, R. telmateium, pale purplish blush; R. fastigiatum forma and R. racemosum. Besides these there were plants of several large foliaged species, notably R. sino-grande. At the back of the Rhododendrons there were good flowering examples and various Cherries, Forsythias and Pyruses (Silver-gilt Banksian Medal).

Various Rhododendrons, chiefly Himalayan hybrids, were also shown by Mr. G. Reuthe, who also staged Camellias and such alpines as Anemone fulgens, Saxifrages and Primulas.

In a rockery group Messrs. Cutbush and Son exhibited Rhododendron Pink Pearl, Cystus Dallimorei, Japanese Azaleas and Alpines (Silver Banksian Medal).

Iris Susiana, I. cristata and I. Bucharica, with Erythoniums, and the yellow Poppy-like Stylophorum dyphyllum were contributed by Messrs. Waterer, Sons and Crisp (Silver Banksian Medal). Several desirable Primulas, principally P. cashmeriana Ruby, P. frondosa, and P. denticulata magnifica were included in an exhibit by Messrs. Bakers Ltd. (Bronze Banksian Medal).

Rock garden exhibits were made by Messrs. Maxwell and Beale (Bronze Banksian Medal) who included Menziesia empetrifolia, and Gazanea splendens; by Mr. Clarence Elliott (Silver Banksian Medal) who had Primula pubescens alba aud the lovely white-eyed, mauve coloured P. Mrs. J. H. Wilson; by Messrs. W. H. Rogers and Son (Silver Banksian Medal) whose outstanding plants were Primula atropurpurea, P. Crispii, Gaultheria procumbens and Cupressus tetragona var.

Many Saxifrages, Anemones and Primulas were planted in goodly batches by Messrs. M. Pritchard and Sons (Bronze Banksian Medal. Messrs. J. Cheal and Sons showed Alpines and early flowers of Star and Mignon Dahlias (Bronze Banksian Medal). Messrs. Skelton and Kirby associated Violas and Saxifrages with Hoop Petticoat Daffodils.

In a well arranged rock garden Messrs. Carter Page and Co. planted attractive batches of Narcissus triandrus varieties, N. citrinus, Primula denticulata alba, Puschkinia scillioides and Anemone Pulsatilla (Silver Banksian Medal). Mr. F. J. Wood showed Crown Imperials, Andromeda rosmarinifolia and Hyacinthus paradoxa with other alpines (Bronze Banksian Medal).

Excellent strains of Polyanthuses were shown by Mr. G. A. Miller, Messrs. J. and A. H. Crook and Mrs. Barnard, Duncote Hall, Towcester. In the last named there were Purple Robe, Radiance and Cherry Ripe of rich shades of purple and maroon.

Mr. B. Pinney again showed Violets. Messrs. Reamsbottom and Co. exhibited their usual collection of very fine St. Brigid Anemones, and Mr. J. Klinkert exhibited topiary specimens.

Narcissus and Tulip Committee.

Present: Mr. E. A. Bowles (in the Chair), Mrs. Brodie, Miss Willmott, Rev. J. Jacob, and Messrs. Herbert Smith, W. F. M. Copeland, G. Churcher, F. Barchard, Rollo Meyer, G. W. Leak, J. de Graaff, J. W. Jones, Geo. Monro, F. H. Chapman, W. B. Cranfield, W. Poupart, Chas. H. Curtis, and Robt. W. Ascroft (Secretary).

AWARDS OF MERIT.

Narcissus Irene Copeland.—A distinct new double variety, in which the larger segments are pale greenish yellow and the smaller ones, interspersed among the inner paler ones, reddish orange. It is a fine flower but not particularly attractive or refined. The award was granted as a show flower. Shown by Mr. W. F. M. Copeland, Southampton.

Pilgrimage, II a.—A bright and well-proportioned incomparabilis variety. It was raised by the Brodie of Brodie, and the colour is rich yellow, the large cup having an orange tint in the yellow. Exhibited and awarded as a show flower. Shown by Mr. F. Herbert Chapman.

GROUPS.

Messrs. Barr and Sons were awarded a Gold Medal for a most meritorious display of Narcissi, every bloom being in the highest condition of perfection, and the varieties representative of the choicest sorts in cultivation. In all there were some three hundred and fifty varieties including numerous seedlings raised in the firm's nursery in Cornwall. Prominent vases were Crœsus, with cream perianth and orange red crown; Empire, a large bloom of the Leedsii type with well formed perianth and pale citron crown; Tamora, a big white Trumpet Daffodil; Silver Fleece of the Triandrus section, with twin flowers, pure white; Ruby, a variety of the Barri type, with a beautiful deep orange cup and pure white perianth of regular outline; Gold Herald, a model yellow Trumpet variety, the tone being very rich; and Lord Kitchener, a Leedsii with broad, white perianth and delicate primrose cup, this variety being of value for gardens owing to its strong constitution; others of special merit were Sweet Peggy, Orange Sceptre, Royal Gold, Buttercup, a Jonquil hybrid; Village Beauty, Sunny Lass and Apricot Glow.

Messrs. R. H. Bath, Ltd., made a feature with the big Trumpet Daffodil Golden Sunrise in their exhibit, which contained many promising seedlings under numbers, and such beautiful varieties as Golden Dustman, Crystal Queen, Bath's Flame, Duke of Bedford and Van Waveren's Giant (Silver Banksian Medal).

Messrs. J. Carter and Co. were awarded a Silver Banksian Medal for baskets of Tulips and Lachenalias. The display was arranged to produce a decorative effect and the result was very pleasing. Big, round baskets were filled with such beautiful Tulips as William Copland; Murillo, pale pink, and Revo d'Or, the use of Palms and Mahonia foliage as foils being in good taste. Two large baskets contained well-flowered plants of Lachenalia Nelsonii.

Fruit and Vegetable Committee.

Present:—Messrs. C. G. A. Nix (Chairman), W. Poupart, W. G. Lobjoit, Geo. F. Tinley, P. A. Tuckett, S. B. Dicks, A. Bullock, A. Metcalfe, E. A. Bunyard, W. H. Divers, J. Cheal, T. Pateman, E. Beckett, H. Prince, P. C. M. Veitch, J. Wilson, F. Jordan and A. N. Rawes.

Mr. R. B. Rogers, Hexworthy, Launceston, Cornwall, showed fruits of the Japanese Quince, Cydonia lagenaria var. Wilsonii. They were as large as Codlin Apples and Mr. Beckett stated that they make excellent jelly.

Messrs. G. Bunyard and Co. again showed varieties of Apples representing a selection of the best sorts in season. They were Jonathan, Sturmer Pippin, Reinette Zuccamaglio, with rich golden skin and flushed red on the sunny side, and spotted like King Harry which it somewhat resembles in shape; Christmas Pearmain, Ontario, Lord Burghley, Alfriston, Allen's Everlasting, Norman's Pippin, Wagener, Heusgen's Golden Reinette, and Claygate Pearmain.

FALMOUTH SPRING FLOWER SHOW.

April 1 and 2.—The collections of hardy and half-hardy flowering shrubs which were displayed at Gyllyngdune, Falmouth, last week rivalled those at any previous show held in the Duchy of Cornwall. Both numerically and in brilliance of colouring Rhododendrons took pride of place, and in the competitive classes the first prizes were won by R. Barclay Fox, Esq. Amongst his collection, Rhododendron ciliicalyx, the half-hardy, white-flowered species, introduced by Delavay from Yunnan some forty years ago, received a deal of admiration. Mr. R. Barclay Fox was also the most successful exhibitor of Azaleas and of Camellias. Mrs. C. Hext, J.P., Trebah, Mawvan, also showed good collections of Rhododendrons.

The best collection of sprays of shrubs, excluding Rhododendrons and Azaleas, was staged by Capt. Dowman, Trevissome, Flushing, and he also won first prizes for the best spray of Acacia, and for unforced spring flowers other than hard-wooded shrubs.

Competition with Violets is always keen at Cornish spring shows, and on the present occasion the previous high quality was fully maintained. Miss E. Prewett showed the best singles, while Miss Daubuz was first with double-flowered Violets.

The best collection of Narcissus in the amateurs' classes was exhibited by Mr. G. G. Lawson, while Mr. H. J. Morris was similarly successful with "Ajaz" Daffodils, and in the market growers' class Mrs. Bates won the first prize.

Trade exhibits were an important feature of the show, and Gold Medals were awarded to Messrs. Barr and Sons, Messrs. Robert Veitch and Son, Messrs. Allwood Bros., Messrs. Stuart Low and Co., Messrs. W Ruse and Sons, and to the Devon Rosery Co., for their excellent contributions.

Obituary.

Roderick McInnes.—As a result of complications after influenza, Mr. Roderick McInnes, head gardener, Cushnie House, Aberdeenshire, died in the Aberdeen Royal Infirmary. Mr. McInnes went to Cushnie from Craigievar Castle, Aberdeenshire, nine years ago, where he very soon gained the respect and esteem of his employers. Sir John H. Seton, Bt., of Cushnie, and Lady Seton sent a beautiful wreath in memory of one they held in great regard. Deceased is survived by a widow and four sons.

We regret to announce the death of Mr Noah Kneller of Laverstoke; Mr. John Roberts, formerly of Gunnersbury; and Mr. Geo. P. Bound of Grimstone Park. We also regret that owing to the early date on which we have to go to press this week the obituary notices of these three excellent gardeners must be reserved until our next issue.

ANSWERS TO CORRESPONDENTS.

Various Plants Unhealthy: *H. K.* The injury to the foliage is not caused by organic disease but is the result of an injury from some cause, such as over-watering or damage through the use of some strong fumigant. Most probably it is the result of a check at the roots caused through improper watering, but both an excess or insufficiency of moisture would be likely to result in the tips of the leaves and the edges of the margins dying. Seeing that some of the roots are decayed in the pots the most likely cause is excessive moisture. We do not think that lime in the water would be likely to cause the trouble.

Grains of Paradise: *A. L.* Grains of Paradise are the seeds of Amomum Melegueta, a species belonging to the Ginger family. The seeds are aromatic, carminative, and at one time were used to give a false strength to beer and other liquors. The seeds of some other species of Amomum are also known in India as Grains of Paradise, and probably those sold by bird-seed dealers are not confined to any one species.

Communications Received.—C. R. N.—A. S. W.—E. B.—S. J.—A. U.—W. E. T.—A. B. R.—G. N. B.—J. M. W.—D. M.—F. C. B.—A. W. G.

MARKETS.

COVENT GARDEN, Monday, April 6th, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Azaleas, per doz.	15 0–36 0
Cacti, per tray,	
—12's, 15's	5 0– 7 0
Cinerarias, doz.	15 0–24 0
Crotons, per doz.	30 0–45 0
Cyclamen—	
—32's	36 0–48 0
—48's	24 0–30 0

	s. d. s. d.
Cyrtomium	10 0–15 0
Erica melanthera, 48's per doz.	21 0–30 0
— —60's, per doz.	8 0–10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0– 4 0
Marguerites, white, 48's per doz.	18 0–30 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun.	12 0–15 0
Asparagus, plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays	1 6– 2 6
short „	0 9– 1 3
—Sprengeri, per bun.	
long sprays	1 6– 2 0
med. „	1 0– 1 6
short „	0 4– 1 0
Azalea, white, per doz. bun.	9 0–10 0
Bouvardia white, per doz. bun.	12 0–15 0
Camellias, White, per box	4 0– 4 6
Carnations, per doz. blooms	4 0– 5 6
Croton leaves, var., doz. leaves	0 9– 2 6
Daffodils—	
—Emperor, per doz. bun.	10 0–12 0
—King Alfred, per doz. bun.	12 0–15 0
—obvallaris, per doz. bun.	3 0– 5 0
—Sir Watkin, per doz. bun.	5 0– 6 0
Fern, French, per doz. bun.	0 9– 1 3
Freesia, white, per doz. bun.,	2 0– 3 0
Galax, American, green and bronze, per doz. bun.	— 3 0
Lilac, Dutch, per spikes	4 0– 8 0
Lilium speciosum rubrum, long, per doz. blooms	4 0– 5 0
—short „ „	3 0– 4 0
Lilium longiflorum long, per doz.	10 0–12 0
Lily-of-the-Valley, per doz. bun.	24 0–36 0
Narcissus—	
—Scilly White, per doz. bun.	3 0– 5 0
—ornatus, per doz. bun.	5 0–10 0
Orchids, per doz.	
—Cattleyas	24 0–30 0
—Cypripediums	5 0– 7 0
Primroses, per doz. bun.	1 6– 2 0
Prunus triloba (Dutch), per bun.	1 0– 1 6
Richardias (Arums) per doz.	10 0–15 0
Roses, per doz. blooms, Richmond	4 0– 7 0

	s. d. s. d.
Roses, per doz. blooms Liberty	5 0– 8 0
—Madame Butterfly	9 0–12 0
—Mme. Abel Chatenay	4 0– 6 0
—Melothy	— —
—Niphetos	4 0– 4 6
—Ophelia	8 0–12 0
—Sunburst	7 0– 9 0
Ruscus, French, per bun.	1 0– 2 0
Smilax, per doz. trails	3 0– 3 6
Spanish Iris, per doz. bun.—	
—Blue	30 0–36 0
—Mauve	30 0–36 0
—White	36 0–42 0
—Yellow	36 0–42 0
Sweet Peas, per doz. bun.	10 0–12 0
Tulips, per bunch—	
—Bartagon	1 6– 3 0
—Clara Butt	2 0– 3 0
—Couronne d'Or	2 0– 2 6
—La Reine	1 6– 2 0
—Prince of Austria	1 9– 2 0
—Wm. Copland	2 0– 3 0
—Farncombe Sanders	2 0– 3 0
—White Swan	2 0– 2 6
Violets, per doz. bun.	2 0– 4 0
French Flowers—	
Anemone, dble. pink, per doz.	3 6– 5 0
—De Caen, mixed, per doz.	6 0– 7 6
—single blue, per doz.	2 6– 3 0
Freesia, long, per pad	12 0–14 0
Marguerite, yellow, per pad	8 0–10 0
Marigolds, per pad	7 0–10 0
Narcissus—	
—Grand Primo, per doz. bun.	4 0– 5 0
Ranunculus, dble. scarlet, doz. bun.	8 0–10 0
—Carmine, per doz. bun.	8 0–12 0
Star (Allium), per pad, 48's	16 0–18 0
Stock, double white, per pad 24 bunches	8 0–10 0
—double coloured	8 0–10 0
Violets, Parma, per bun.	3 0– 3 6
—single, per pad	6 0– 8 0
Wallflowers, per pad	5 0– 8 0

Remarks.—All cut blooms will be in great demand for the Easter season and it is difficult to give a correct quotation of prices for the next few days. Richardias (Arums) and Lilium longiflorum will be in great demand; there is likely to be a very limited supply of the latter flower and a general rise in price is anticipated. Daffodils are arriving in good condition, both from home growers and the Channel Islands; supplies from the latter have been fairly heavy during the past week. White Narcissus, including Narcissus ornatus will be in much demand. Supplies of Carnations may be shorter than those of Roses, according to the weather conditions; all blooms of the latter are arriving in excellent condition, including some fine flowers of white Molly Sharman Crawford. Other principal sorts of Roses are: Mme. Butterfly, Mme. Abel Chatenay, Ophelia, Liberty, Richmond, Sunburst and Golden Ophelia. Spanish Irises are arriving in a much improved condition and they include blue, mauve, white and yellow varieties. Tulips have been in rather poor condition during the past week; best blooms remain firm in price. Sweet Peas are improving in quality, but supplies are very limited. White Camellias, white Azaleas and Lily-of-the-Valley all find a ready sale. All foliage has been a very irregular supply for some time past, especially Smilax, which is now coming from Guernsey. Amongst the French flowers the most demand will be for White Stock, Allium (Star), scarlet and pink Anemones, Violets and Marguerites. White and mauve Lilac, which is now arriving from Holland in good condition, will meet with a good demand.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Albermarle	45 0–55 0
—Oregon Newtown	14 0–17 6
—Bramley's Seedling	12 0–18 0
—Australasian—	
—Jonathan	18 0–20 0
—Cox's Orange Pippin	28 0–30 0
—Reinette du Canada	14 0–16 0
—Five Crown Pippin	18 0–20 0
Bananas, singles	16 0–25 0
—doubles	17 0–27 6
Grapes—	
—Belgian Colmar, per lb.	2 6– 4 0
Grapfs, South African—	
—White Hanepoot	5 0– 8 0
—Red Hanepoot	10 0–15 0
—Barbarossa	10 0–12 0
—Rosaki	9 0–12 0

	s. d. s. d.
Grape Fruit, Cuban	18 0–23 0
—Jamaica	18 0–20 0
—Florida	20 0–27 6
Lemons, Messina, per box	8 0–12 0
—Murcia	10 6–14 0
—Naples	16 0–20 0
Oranges, Jaffa	16 0–17 0
—Spanish—	
—300's	16 0–35 0
—360's	14 0–22 0
—504's	14 0–22 6
—Messina Blood	— 16 0
Pears, South African—	
—Beurré Bosc	4 0– 6 0
—Beurré Diel	4 0– 5 0
—Beurré Hardy	4 0– 6 0
—Louise Bonne of Jersey	4 0– 6 0
Pines	3 6– 5 0
South African Plums, Kelsey	5 0– 8 0
Strawberries, per lb.	10 0–20 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	2 0– 2 6
—Worthing	2 0– 2 6
—Madeira, per box	6 0–10 0
Beets, per cwt.	5 0– 6 0
Cabbage, per tally	10 0–12 6
Canary Island Tomatos	18 0–22 6
Cauliflowers, per doz.	4 0– 5 0
Forced Mint, per doz.	4 0–10 0
Chicory, per lb.	— 0 4
Carrots, per bun.	6 0– 8 0
—New	— —
Cucumbers, per doz.	6 0– 8 0
—Flats	20 0–22 0
Dutch Onions	11 6–12 6
Endive, per doz.	1 3– 3 0
Batavia, per doz.	3 0– 3 6
French Asparagus—	
—Cavaillon	5 0– 5 6
—Paris Green	6 6– 7 6
—Lauris	5 0– 7 6
Greens, best, per bag	4 0– 6 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundles	2 6– 3 6
Lettuce, per doz.	1 6– 3 0
—Cos	6 0– 8 0
—Outdoor	2 6– 3 0

	s. d. s. d.
Mushrooms, cups	3 0– 4 0
—broilers	2 9– 3 0
Onions, Valencia, per case	15 6–17 0
—English, per cwt.	12 6–14 0
Parsnips, per cwt.	4 0– 5 0
Peas, French, per cane	— 10 0
—Guernsey forced per lb.	2 6– 4 0
Potatos, Canary Island—	
—Spring crop	18 0–20 0
Potatos, per ton—	
—Dunbar	210 0–240 0
—King Edward	190 0–210 0
—White	90 0–160 0
—New Guernsey lb.	0 8–0 10
—Jersey	0 8–0 10
Scilly	0 8–0 10
Radishes—	
—Guernsey round	1 6– 2 0
—Guernsey long	1 0– 1 6
—French Breakfast	2 0– 3 0
Rhubarb, Forced, per doz.	2 6– 3 0
—"Natural" per doz.	7 0–10 0
Savoys, per tally	12 6–15 0
Seakale, per doz. punnets	18 0–24 0
Spinach, per bushel	5 0– 7 0
Sweet Potatos	— 3 0
Tomatos, English, per lb.	3 6– 4 0
Turnips, new, per doz. bun.	8 0–12 0
Turnip Tops, per bag	4 0 6 0

Remarks.—The Easter holiday trade has been responsible for a more active demand in almost all sections. Imported shipments of fruits from South Africa are a leading feature of the market. The consignments at the moment consist mainly of Grapes, Pears, and Plums. Some early hothouse Black Hamburgh Grapes are arriving from Worthing, but the competition of Australian and Cape Grapes are not helpful to good prices. The first shipment of Australian Apples has been marketed, and except for some instances of bitter pit, the fruits generally are in fair condition. English Bramley's Seedling Apples from cool chambers are still meeting a good market at comparatively high prices. Cucumbers are a firm trade with quantities about normal. A few Tomatos are arriving from Worthing and the Lea Valley and are very dear. Seakale has been a good trade. Forced vegetables, such as Beans, Peas and new Potatos are enquired for: Asparagus is also selling well. Mushrooms remain at about the same prices as last week. Salads are, as is usual at this season, in good demand. Rhubarb, both forced and natural, has been a firm business. Trade in old Potatos is good, considering that there is a bigger enquiry for new Potatos.

GLASGOW.

The cut flower market was dull during the greater part of the week, but on Friday a smart recovery in prices took place owing to the shortage of English supplies, which benefited home growers. Mavisbank Tulips were in strong demand, and although 140 boxes were sent from that nursery there were not sufficient flowers to go round. Buyers had consequently to concede higher values, which averaged as follow:—Bartagon, 1/4 to 1/6 for 6's; Copland and Sanders, 1/3 to 1/4; Princess Elizabeth and No. 1 Pink, 1/4 to 1/6; Electra, 1/6; Valentine (new), 1/2; Tea Rose, 1/3; Glory and Prince of Austria, 1/-, and Murillo, 10d. First arrivals of the variety Triumpaator made 2/-. Daffodils were also dearer, King Alfred ranging from 12/- to 14/- per doz. bunches; Emperor, 3/6 to 5/-; Golden Spur, 3/- to 4/-; Barri conspicuus, 3/6 to 4/-; Horsfieldii and Victoria, 3/- to 4/-; Scotch ornatus, 6/- to 9/-; Guernsey, 4/- to 6/-. Carnations realised from 2/6 to 4/6 for medium and 5/- to 6/- for special blooms, while Roses made 7/- to 9/- for Madame Butterfly, and best Mme. Abel Chatenay, and 3/- to 5/- for Mme. Abel Chatenay and Mrs. Stevens. Blue Iris (I. filifolia) sold at 3/6 to 4/- per bunch, and Guernsey at 5d. to 6d. for 6's. Inferior Lilac averaged 6/- for white and 4/- for coloured. Lilium longiflorum (Harrissii) sold at 7/- to 8/6 per bunch; Richardias, 6/- to 9/-; Lily-of-the-Valley, 1/6 to 2/-; English Violets, 1/- to 1/6; Prunus, 2/6; Wallflower, 1/9 to 3/-, and Hyacinths, 6d. to 9d. for 3's. Pot Azaleas were worth 4/- to 4/6 each; Small Ferns, 3/- to 4/- per doz., and strong Wallflower plants, 1/9 to 2/- per box.

Business in the fruit section was rather slow and prices developed an irregular tendency. Cape Fruits continued firm at the following quotations: Pears—Beurré Hardy and Louise Bonne of Jersey, 5/- to 6/- per box, Beurré Bosc 5/6 to 6/6, Buerré Diel, 5/- to 5/6, and Beurré Clairgeau, 4/9 to 6/6. Peaches—Elberta 6/- to 7/6, Gladstone 5/- to 7/-, Freestone, 8/6 to 10/-; Grapes—White Hanepoot, 10/6 to 12/6, red ditto, 12/- to 14/-, and Hermitage, 10/- to 10/6. First consignments of Australian Pears made 13/- for Bartlett and 14/- for Beurré Bosc. Jaffa Oranges declined further to 15/- and 17/-, but Valencias displayed a firmer tendency, the various counts fluctuating between 15/- and 18/- for 360's up to 23/- to 35/- for 440's. Barrel Apples were cheaper, especially Albemarle Pippins, which ranged from 42/- to 50/-, Baldwin (U.S.A.) averaged from 33/- to 48/-, Nova Scotia 26/- to 30/, and Ben Davis 27/- to 32/-. Case Apples were limited to Oregon Winesap at 16/- to 20/-, and Newtown 15/- to 18/6. First arrivals of Guernsey Tomatos realised 5/- to 6/- per lb.

New Vegetables found a ready sale. Teneriffe Potatos made 20/- per case and Pears 8/- per case, Asparagus, 5/- and Lettuce 2/- per dozen; Cucumbers were cheaper at 8/- to 10/-, Seakale, 2/- to 2/6, Radishes, 2/6 to 3/-, French Turnips, 1/2 to 1/6 per bunch, Syboes, 6/- to 7/-. Madeira Beans were dearer at 7/- to 8/6 per box, Guernsey Beans, 2/3 to 2/6. Rhubarb realised 34/- to 42/- per cwt.

TRADE NOTES.

The whole stock of the beautiful and appropriately named Freesia Wistaria (see *Gard. Chron.*, March 14, p. 191, has been acquired jointly by Mr. George Monro, Tavistock Street, Covent Garden, and Messrs. Dobbie and Co., Edinburgh, but at present no decision has been arrived at as to the time and method of its distribution.

Keeping the garden paths free from weeds by hand labour is a tiresome, back-aching business, but this may be avoided by the use of Eureka weedkiller. This is obtainable in powder and in liquid form and is excellent for keeping the gravel paths clean and bright with a minimum of labour and without injuring borders or disturbing gravel.

As a consequence of the projected visit of His Royal Highness the Prince of Wales to South America, a stimulus has been given to trade between the Argentine Republic and this country. We learn from Messrs. Sutton and Sons, of Reading, that they have shipped a very large order to the Argentine Ministry of Agriculture of vegetable, flower, and grass seeds, and there are signs that their business with the Argentine will be far in excess of previous records.

GARDENING APPOINTMENTS.

Mr. E. S. Goff, for six years gardener to the late Col. Robert G. Cosby, at Stradbury Hall, Queens County, and two years with the late Capt. Dudley Cosby at the same address, and recently at Bessborough Gardens, Piltown, Co. Kilkenny, as gardener to Col. and Lady Wyndham Quin, Castletown, Carrick-on-Suir. (Thanks for 5s. for R.G.O.F. Box.—Eds.).

Mr. M. Hardwick, previously gardener to S. R. C. Bosanquet, K.C., of Dengestow Court, Monmouth, as gardener to Miss Binyon, Henwick Grove, Worcester.

SCHEDULE RECEIVED.

Burnley and District Horticultural Society.—Thirteenth summer show to be held in Bank Hall Meadow, Colne Road, Burnley, on Saturday, August 22.—Secretary, Mr. Arthur Eastwood, 59, Ennismore Street, Burnley.

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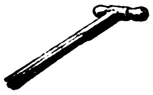

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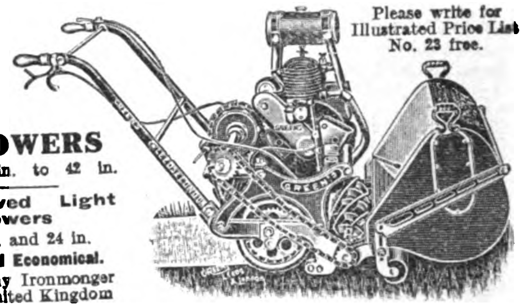

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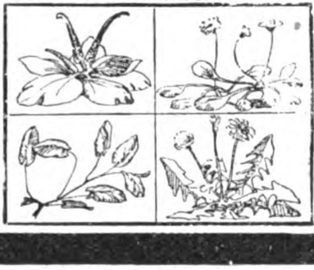

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Midlothian Early, Beauty of Hebron, Immune Ashleaf, Epicure, Arran Rose, 28 lb., **6/6;** 56 lb., **11/6;** cwt., **21/-.**

Sharpe's Express, Eclipse, Dargill Early, Edzell Blue, 28 lb., **5/6;** 56 lb., **9/6;** cwt., **17/6.**

SECOND EARLY VARIETIES.

Catriona, 28 lb., **10/-;** 56 lb., **18/-;** cwt., **34/-.**

Katie Glover, Great Scot, British Queen, Ally, 28 lb., **5/6;** 56 lb. **9/6;** cwt., **17/6**

MAIN CROP VARIETIES.

Crusader, Tinwald Perfection, Golden Wonder, Kerr's Pink, Bishop, Templar, Red King, K. of K., Field-Marshal, Roderick Dhu, Majestic, King Edward, Arran Chief, 28 lb., **5/6** 56 lb., **9/6;** cwt., **17/6.**

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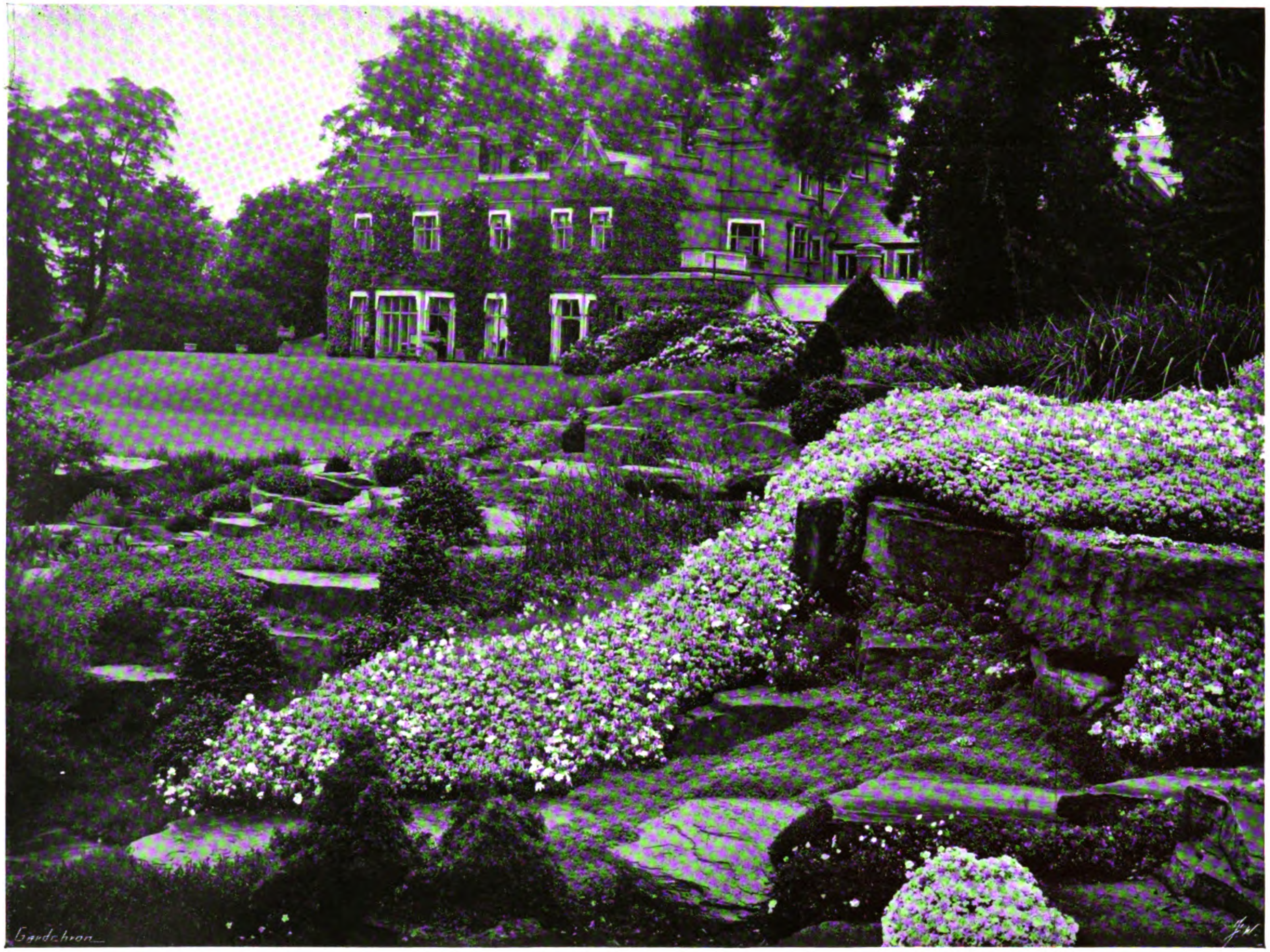

A FINE DRIFT OF IBERIS IN THE ROCK GARDEN AT KINGS WALDEN BURY, HITCHIN.

THE
Gardeners' Chronicle
No. 1999.—*SATURDAY, APRIL* 18, 1925.

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SUPPLEMENTARY PLATE.

Iberis in the rock garden at Kings Walden Bury.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 48·6°.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, April 15, 10 a.m. Bar. 29·8, temp. 53° Weather, Bright.

Raspberries. THE work which is being done at the national fruit stations at East Malling and Long Ashton is gradually revolutionising fruit growing. Each account of the results of the experiments and investigations which are being carried out at these stations throws new or clearer light on the problems which the fruit grower, if he is to be successful, must solve for himself. They show also how he may set about solving them. The activities of East Malling include not only the investigation of top fruit, but also of bush fruit, and one of the most recent accounts of the work in progress at the station has reference to Raspberries. Although not a few growers have reason to be satisfied with the results that they obtain with this fruit there are many, both commercial and garden-growers, who are dissatisfied. An old, well-tried variety, for example, Superlative, which at one time justified its name, has of recent years showed unmistakable signs of deterioration and is now, generally speaking, hardly worth planting. Yet there are places where, in good soil, Superlative is still one of the best varieties. Park Lane, perhaps the best-flavoured variety in existence is, from the gardener's point of view, always worth a trial, but only if the gardener keeps a vigilant eye on it to discover whether it does with him what it is wont in certain districts to do, namely, to "go blind" during the winter. Where it develops this defect and many buds fail to break, the crop is light, and there Park Lane should be discarded. Where, on the other hand, it refrains from this bad habit it should be grown both on account of its excellent flavour and large fruit. Pyne's Royal, one of the newer kinds, has already in many places justified itself as a good cropper of large fruits and should be tried by all gardeners. In the trials extending over four years carried out at East Malling and reported on by Mr. N. H. Grubb,* Pyne's Royal stood at the head of the cropping list with a crop fifteen per cent. higher than that of any other variety. Superlative came out badly with only forty-two per cent., and Park Lane's crop was but one-third of that of Pyne's Royal. Yet there are places where this cropping relation would certainly not hold, and the all-important conclusion to be drawn from these trials and investigations is that each and every gardener should institute trial plantations of the varieties—by no means very numerous—which are of outstanding promise, and that he should from the results of the trial grow those which succeed best in his garden. The gardener, however, must be prepared to do more than this. He must know the characters by which a given variety is distinguished; for there is at present no little confusion in the nomenclature of varieties of Raspberry. For example, Mr. Grubb has sorted out no fewer than six distinct Raspberries, all of which bear the name Red Antwerp. Of the six, one is altogether worthless and one is good only on certain soils. Anyone who having been recommended to grow this variety chanced on the bad one might well echo Juliet's comment, "What's in a name!" Similarly, the name Baumforth's Seedling has been found to connote three distinct varieties. The one now but little grown for market and designated by Mr. Grubb as Baumforth's Seedling A, is superior, especially for jam-making, to another of the name, Baumforth's Seedling B, which, however, is much more widely grown. The latter, however, has the merit of cropping well in poor soil. Sometimes one variety enjoys two names. Such is the case with the variety known alternatively as Bath's Perfection and Laxton's Abundance. Therefore, if the gardener is to grow scientifically, that is, successfully, he must learn the characters which distinguish the varieties, so that he may know what he is actually growing. Mr. Grubb's careful analysis of the characteristics of the several varieties permit of this being done with fair ease. The characters which serve for diagnostic purposes are, first, the downiness or smoothness of the new canes, and, second, the colour of the base of the spines in relation with that of the stem. By these characters the different varieties may be separated into groups. The individual characters of each variety within a group may then be used to determine the name by referring to Mr. Grubb's description.

Opening of Wisley on Sunday.—The Council of the Royal Horticultural Society has decided to open the Experimental Gardens at Wisley on Sundays during the coming summer, from Sunday, May 3, to Sunday, September 27 inclusive, from 2 to 6 p.m. Admission cannot be obtained on Sunday at any other hour. The regulations governing admission are as follow:—(1) Only persons bearing Fellows' tickets of the current year can be admitted. Each ticket admits three persons. Children cannot be admitted unless accompanied by an adult who must be responsible for their behaviour. (2) Parties cannot be admitted to the Gardens on Sunday. (3) No vehicles of any description are allowed to enter the Gardens. (4) No dogs or other animals can be admitted. (5) No bags, baskets, or parcels and no flowers may be brought into the Gardens. Those who wish may leave such articles with the attendant at the gate. (6) Permission cannot be given for photography or painting on Sunday. (7) No persons shall touch the plants, flowers or fruit, or interfere with animals, birds, or nests in the Garden. (8) Picnics are not permitted in the Garden. (2) Expert advice will not be available on Sunday, nor will any fruit, etc., be sold.

Our Supplementary Plate.—The illustration in our Supplement Plate shows a wide breadth of Iberis sempervirens var. Snowflake tumbling over the rocks. From the opposite hillside it gives the effect of a carpet of snow and at Kings Walden Bury some visitors have likened it to "a glacier." The Iberis forms part of a great scheme of planting initiated by the late Mr. T. Fenwick Harrison and keenly followed up by his son Major J. Fenwick Harrison. It was recognised that a rock garden covering more than an acre in extent, should be planted boldly with large breadths of the more important Alpines. Originally it was essentially a spring flowering rock garden, but this idea has been somewhat modified during recent years, the flowering period being extended to the autumn by the use of suitable kinds of plants. Masses of Saxifragas, Anemone Halleri, Rock Roses Mertensia echioides, and Pentstemon heterophylla, with others, make a delightful picture. Beyond an annual top dressing with a liberal mixture containing lime rubble the Iberis requires very little attention; the fading flowers are removed, and the shoots are often allowed to grow for a year or two before being cut back, but no undue encroachment over the large boulders is allowed at any time. Two other breadths of Iberis, besides the one figured, are planted in the upper part of the rock-garden, one near the edge of the lake and following the upper waterfalls, and the other at the lower edge of a belt of Pines which can be seen from the house. A large stock of young plants of Iberis and other alpines is kept in the rock-garden nursery for replenishment at any time. Below the Iberis shown in the illustration and on the opposite side of the water course is the bog garden which can be flooded at will. The arrangements for water are made with a view to economy as there is no natural stream of water. The upper falls, when the sluice is turned on from the lake, are capable of carrying 10,000 gallons of water per hour, but this may be returned to the lake from the lower pool by a powerful petrol pump.

The Royal Gardeners' Orphan Fund.—The Right Hon. Sir Alfred Mond, Bart., M.P. will preside at the Annual Festival Dinner of the Royal Gardeners' Orphan Fund, at the Hotel Victoria London, on Wednesday, May 13th next.

The Rating of Nurseries.—A question of considerable importance to nurserymen was raised recently before the Glasgow Assessment Appeal Court. Messrs. Austin and McAslan objected to the payment of full rates on ground at Newlands Road, Cathcart, used by them as a nursery. After hearing the case for the appellants the city assessor intimated that he did not object to the nursery grounds, which cover an area of forty acres, being rated at one-seventh of the value, and the court decided accordingly.

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* Commercial Raspberries and their Classification. By N. H. Grubb, M.S.A., East Malling Research Station. *Journal of Pomology* III., November 1, 22.

A similar point was raised in connection with the valuation of allotments at Easter Keppoch Gardens, and in this case a rating of one-fourth of the value was allowed.

Woodbridge Floral Fête to be Resuscitated.—On Monday, April 7, a large, enthusiastic and representative meeting, convened by the Traders' Association, on the suggestion of the St. John's Men's Society, was held at St. Mary's Hall, Woodbridge, to consider the advisability of resuscitating the Woodbridge Horticultural Society. Mr. R. H. Rowland, J.P., President of the Traders' Association, was voted to the chair, and the secretary of the Association read letters of apology for absence from a number of influential persons in East Suffolk promising subscriptions and other help. The writers were Lord Cranworth, Sir George Manners, Col. R. J. Carthew, Major Cramer Roberts, Brig.-Gen. Schreiber, Major Guy Vivian, Mrs. Capel-Cure, Miss E. M. Johnson, Messrs. A. T. Cobbold, T. G. Heatley, R. C. Notcutt, A. P. Marshall, E. Bilney, R. Bentham, and H. Barton. An influential committee, including all the above-named gentlemen, was formed, and Mr. W. Savage promised to undertake the duties of secretary *pro tem.* The Rev. T. G. Rhind-Tutt, vicar of St. John's, an ardent horticulturist, made some encouraging remarks, and the first meeting of the committee was fixed for Monday, April 20.

Wasps.—Wasps are a great concern to the gardener and, indeed, to the country dweller generally. They spoil a great deal of the fruit crops, and especially the choicest fruits grown under glass. Most gardeners recognise only the wasp as such, and are not aware that there are several distinct kinds, although only two, the common wasp, Vespa vulgaris, and the German wasp, Vespa germanica, are likely to be troublesome in gardens. The Ministry of Agriculture has issued a little volume on these insects,[*] which contains an excellent plate in colours of the seven indigenous species, the illustration rendering identification very simple. Wasps differ from bees in that a community of wasps does not survive the winter, the only individual hibernating during that time being the queen or female wasp. The old queen and the workers die in the autumn, and no honey is stored, there being no community to consume it. The young queen is a member of the previous autumn's young brood, and she emerges during the warm days of early spring to become the founder of a fresh colony. Both the common wasp and the German wasp make their nests in the ground, but some of the wasps form their nests in hollow trees or in bushes, the wasp's nest often found in Gooseberry bushes being that of Vespa norvegica, the Norwegian wasp. When the queen has found a likely place for her nest she commences to form cells for depositing her eggs, and the young larvae are at first fed by her, but later a race of worker wasps appear, and these take part in building the nest and tending the young brood. When this occurs the queen ceases to forage and concentrates on the laying of eggs. A queen of the two common species may lay as many as four thousand to five thousand eggs in a single nest during the season. Thus is seen how important it is to kill the young queens in the spring and early summer. The best method of destroying wasps is to place a small quantity of sodium cyanide or potassium cyanide in the entrance of the nest, which should not be closed. The publication also refers to the trapping of wasps by means of syrup, jam, or other sweet stuff mixed with beer and placed in narrow-mouthed bottles. This latter method, however, only kills workers, and has little effect in diminishing the population of the nests in the district.

Mr. Bertram J. Beckton.—The Daisy Bank collection of Orchids at Irlams o' th' Height, Manchester, was commenced by the late Mr. Thomas Beckton thirty-five years ago. The first plants were bought at the sale of Dr. Ralph Fawsett Ainsworth's Orchids, which were sold on April 22, 1890. One or two of these plants are still alive in the collection, now owned by the son, Mr. Bertram J. Beckton, who, from his earliest years, has had an intense love of nature, and is especially fond of flowers. Even as a school boy his chief interest was the study of British wild flowers and lepidoptera. He preferred to hunt amongst the lanes and hedges of the countryside, for his favourites rather than play games, and although the latter were compulsory and the head master was a strict disciplinarian, young Beckton obtained leave to forego the games during his last year and devoted all his spare time to the study of nature. British wild flowers and trees are still great favourites with him, but living near a large town he sees very little of them. To make up for this he cultivates a selection of the best hardy flowers; the common British Golden Rod (Solidago Virgaurea), he considers a better border plant than any of the alien species of Solidago. For the first fifteen years of its existence the Daisy Bank collection of Orchids did not make much headway; this was partly due to the fact that Mr. Beckton found it difficult to get reliable advice from either amateur or professional growers. He had to learn everything for himself and obtain his own experience—a long and costly business. As time passed, he found more interest and better results from plants grown under glass than in the outside garden. The latter is very bright and gay during the months of June and July, but during the rest of the year, owing to the smoky conditions of Manchester, the outside garden is not what it should be. After carrying out extensive trials with all kinds of plants, he has finally decided no others are so satisfactory as Orchids. For several years his chief interest was in the genus Cypripedium, because of its winter-flowering and long-lasting properties and also its remarkable ease of cultivation. Gaining confidence as a grower, he gradually acquired many of the more difficult, but infinitely more interesting, so-called botanical species, in preference to the more showy, though not so pretty, hybrids. His collection now includes members of no fewer than one hundred distinct genera, and most of them do fairly well.

MR. BERTRAM J. BECKTON.

In August, 1923, Mr. B. J. Beckton was asked by a few Manchester enthusiasts to act as honorary secretary to the newly-founded Orchid Club. Remembering his early difficulties, and feeling sure there must be dozens of people in want of assistance in keeping and developing their interest in Orchids, he consented, and still holds that position. The Orchid Club was founded for the express purpose of promoting good fellowship and understanding amongst amateur Orchid growers, and for the exchange of cultural experiences amongst its members. With such an enthusiastic and knowledgable secretary as Mr. B. J. Beckton it is fulfilling its purpose.

Honours for British Horticulturists.—We learn with great pleasure that the French Government has granted the honour of Chevalier of the Order of the Merite Agricole to Mr. George Monro, Tavistock Street, Covent Garden; and to Mr. J. S. Brunton, Burnley, Lancashire, for services rendered to French horticulture.

Peter Barr Memorial Cup.—The award of the Peter Barr Memorial Cup—for good work done in connection with Daffodils—for the year 1925 was made unanimously in favour of Mr. F. Herbert Chapman, of Rye, on the occasion of the meeting of the Royal Horticultural Society's Daffodil Committee on April 7. Mr. Chapman is well-known as a very successful raiser of Daffodils, and particularly of poeticus and incomparabilis varieties. He has also been successful as a raiser of Irises and several choice vegetables. A portrait and appreciation of Mr. Chapman appeared in our issue of January 22, 1921.

Royal Caledonian Horticultural Society's Spring Show.—The spring show of the Royal Caledonian Horticultural Society, with which is incorporated the Scottish Horticultural Association, will be held in the Waverley Market, Edinburgh, on the 24th and 25th inst. The schedule includes ninety-six classes, and is divided into sections for plants, cut flowers, and vegetables, those of the first section being the most numerous. The Secretary is Mr. Donald Mackenzie, 4a, St. Andrew Square, Edinburgh.

"Kew Bulletin."—The *Kew Bulletin*, No. 2, 1925, is of greater botanical than horticultural interest. It contains a statement of the Standard-species of the Linnean genera of Tetradynamia, descriptions of new species of Dioscoreae, a second series of Notes on Cyperaceae, and an account of plants from Bencoolen, Sumatra, while the Miscellaneous Notes include an appreciation of the late Mr. William Watson, for very many years Curator at Kew, and a brief obituary notice of the late Dr. Horace T. Brown, formerly engaged in research work at the Jodrell Laboratory.

National Auricula and Primula Society.—The forty-eighth Annual Report of the Southern Section of this special flower Society is issued together with the schedule of prizes offered for competition at the annual show, which is to be held in conjunction with the Royal Horticultural Society's Fortnightly Meeting, at Vincent Square, on May 5 and 6 next. There are the usual classes for show and for alpine Auriculas, with four classes for Primula species and varieties, while Polyanthuses and Primroses have five classes between them.

Training and Examination of Seed Analysts—The fourth Course of training seed analysts will be held in the summer of 1925 beginning on July 7 at the Official Seed Testing Station, Cambridge. A limited number of seed analysts will be admitted to the Course on the following conditions:—(1) The Course will be limited to persons who satisfy the Chief Officer of the Station that they are fitted to take advantage of the instruction. They must be (a) nominated by seed firms who intend to offer employment to such nominees in their own seed-testing stations, or (b) recommended by Universities, Agricultural Colleges and Institutions, or (c) approved by the Council of the Institute.

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[*] *Wasps*. Miscellaneous Publications, No. 44. Ministry of Agriculture, 10, Whitehall Place, S.W. 1. Price 4d. post free.

(2) An examination will be held at the conclusion of the Course and certificates will be issued to students who satisfy the examiners. The examination will also be open to practical seed analysts who have not attended the course of training, provided that they are nominated, recommended or approved as described in paragraph 1; (3) The fee for the training course, which will end on August 7, including the examination fee, will be £6 6s. The entrance fee for the examination only will be £1 1s.; and (4) Persons wishing to attend the course and sit for the examination, or to sit for the examination only, should apply for entrance forms not later than June 1, 1925, to the Secretary, National Institute of Agricultural Botany, Huntingdon Road, Cambridge, from whom particulars of the course of training may be obtained.

Appointments for the Ensuing Week.—Tuesday, April 21.—Royal Horticultural Society's Committees meet (2 days); Winchester Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting. Wednesday, April 22.—Midland Daffodil Society's show (2 days); Sheffield Chrysanthemum Society's meeting. Thursday, April 23.—Royal Botanic Society's meeting. Friday, April 24.—National Rose Society's show; Royal Caledonian Horticultural Society's show (2 days); Association of Economic Biologists meet; British Mycological Society's spring foray at Tintern (5 days).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Employment of Waste Steam in Heating Glasshouses.*—The heating of frames and forcing houses with waste steam has the appearance of utility, but I am afraid it will not answer. A friend of mine, who has an extensive factory in this neighbourhood, has fitted up a very nice little greenhouse with pipes and tank, all of which he can heat at pleasure to any temperature by simply turning a cock from the waste steam pipe; so far so good. Nothing could be better. Top heat and bottom heat all for nothing. On calling, however, to see my friend's little conservatory on the Sunday, I found to my surprise the frost on the glass, and the plants looking as miserable as could well be imagined. A few words explained all—the great pot was not boiling—and it would have cost more to heat it for the twenty-four hours of the Sabbath than the greenhouse and all it contained were worth, or certainly more than it would have cost to heat it by ordinary means for a month. How many fine things might be accomplished were it not for the want of one link in the chain that should bind all together? *Charles Lee, Hammersmith.* [Does it not occur to Mr. Lee what this proves].—The following extract from the second volume (page 528) of "Professor Ansted's Geology" may interest your readers, as bearing on the employment of heated water to promote vegetation. "Advantage has sometimes been taken of the temperature of water from deep springs, and conservatories have been warmed and even Cress plots cultivated by such means. It is stated that a salad ground near Erfurt, in which this method is adopted of communicating a high and regular temperature, yields a profit of not less than £12,000 per annum to the proprietor. Fish ponds have been sometimes improved by such warm springs being passed through them." I fear that there has been some mistake in rating the profit so high as £12,000; probably 12,000 francs. But I give the extract in Professor Ansted's own words. *A. C., Edinburgh. Gard. Chron., April 20, 1850.*

Publications Received.—*Oecology of Plants.* By Eug. Warming, assisted by Martin Vahl. Reprinted, Oxford University Press, Amen House, Warwick Square, E.C.4. *A Garden Timepiece.* By M. G. Kennedy-Bell. Hutchinson and Co., Paternoster Row, E.C. Price 7s. 6d.

ALPINE GARDEN.

SAXIFRAGA LIGULATA VAR. SPECIOSA.

This Saxifraga flowers outdoors in February and March in this neighbourhood, and is a member of the large-leaved, Megasea section, as are S. cordifolia and S. Stracheyi. The flowers are sometimes spoiled by frosts but the plant itself is quite hardy. A suitable position should be chosen for it, and one of the best is a steep slope in the rock garden where the leaves may rest upon large pieces of stone. The early morning sun should not be allowed to reach the plants when they are in flower, therefore the position should face full west, and if the rockery rises at least four to five feet above the plant on the north and eastern sides, so much the better, as the frosts will have disappeared before the sun's rays reach the flowers. Given such a position the plants may be as fine as those in Fig. 106. Saxifraga ligulata var. speciosa is often planted out in masses in a cool greenhouse rockery. Even when not in flower it is handsome for its foliage alone. I have known the specimen illustrated to retain its leaves entirely through the winter and summer in perfect green condition. I think this is due to the surrounding boulders of stone and the steep slope, as water passes rapidly from the site and the ledge is so narrow that surplus water never remains about the crowns. The flowers are light pink and borne on stems twelve inches high, each stem carrying from forty to fifty flowers. *Mark Mills, Coombe House Gardens, Croydon.*

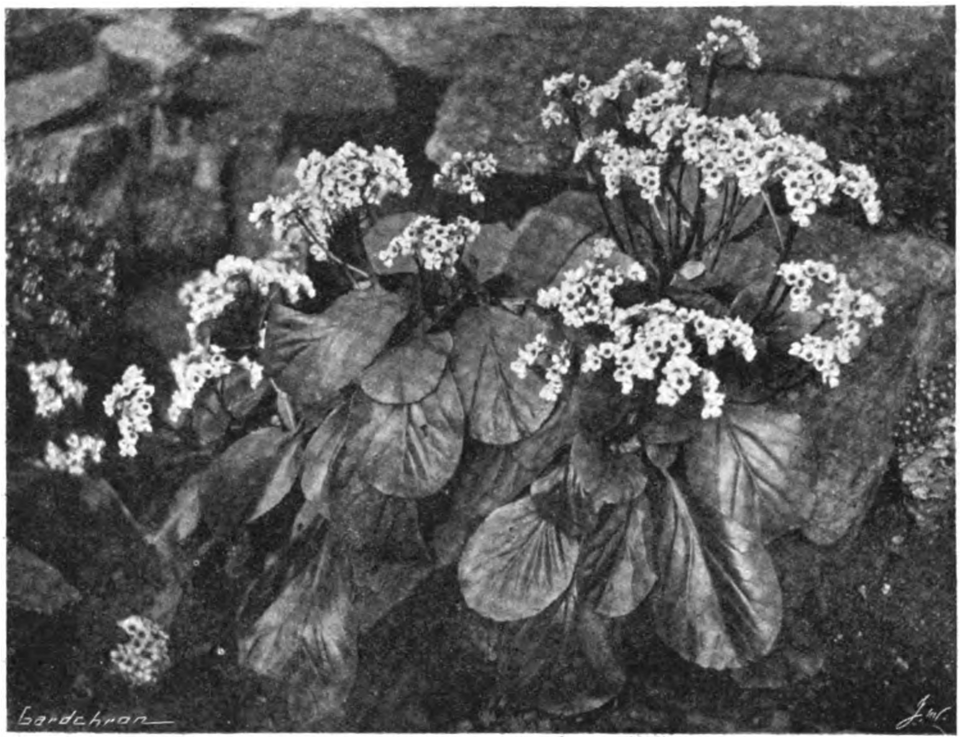

Fig. 106.—Saxifraga ligulata var. speciosa.

PRIMULA MARGINATA.

For a considerable time the newer Chinese hardy Primulas, which have come to us in considerable numbers, have enjoyed a period of popularity and favour which no one who knows them will deny is fully justified. Some of them, it is true, have not appreciated our climate and have had to be cultivated under glass, but the really hardy ones are of unmistakable value in the garden. Yet it would be a great pity were the charms of the Chinese Primulas to blind us to the beauties of those which hail from the European mountains and have been cultivated with success for many years. They are of abounding charm—at least the vast majority—and give a tone to the rock-garden which would be greatly missed were they absent.

One of the most delightful of these European Primulas is P. marginata, the Margined Primrose. It derives its specific name from the exquisite waved and silvered margin of the leaves, a feature of almost marvellous beauty in the eyes of those who can appreciate points of loveliness of leaf as well as of flower. The flowers, which come in spring in little clusters, are not large, and in their simple beauty of form and colour are entirely in unison with the other features of the plant.

There is no reason why anyone possessing even the smallest rock-garden or rockery should not cultivate P. marginata. It is inexpensive; it is procurable from most dealers in alpines, and, high qualification, it is easy to cultivate. It delights in a sunny situation in the crevices or open spaces between the stones of rockwork, especially of limestone, for which it has a distinct preference. But even if limestone is not available it will succeed if lime or old mortar rubble is present in the soil, which should be of a sandy and gritty nature. Firm planting is essential. Specimens may be purchased in pots and planted out at any time.

P. marginata increases well by means of offsets, which may be taken off in spring and placed in soil similar to that recommended for the plants. Even if the offsets are not rooted to begin with, they will soon develop roots and may then be planted where they are to remain.

P. marginata has a tendency to rise out of the soil and to form woody rootstocks; old plants allowed to extend will often hang down over the face of the rockwork. Seeds may also be obtained and sown under glass in spring or when ripe. They may be long in germinating. The flowers of what is regarded as the type are lilac, but there is considerable variation and those of some varieties are almost blue. *S. Arnott.*

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Miltonia vexillaria.—M. Bleuana and the many hybrids of this section are in various stages of growth; many of the plants are developing flower spikes from their partly completed pseudo-bulbs. At this stage every precaution should be taken against attacks of thrips, which if not kept in check will attack the tender flower buds and cause them to become deformed. The foliage should be syringed on bright days, for this will help to keep down the pests and be beneficial to the growth of the plants. The syringing should be done sufficiently early in the day for the foliage to become dry before night arrives. The house should receive frequent mild fumigations. Shade the plants from bright sunshine at all times. They may now be removed from the intermediate house to the warmer end of the cool division, as under more airy conditions the plants will acquire strength and substance in their foliage.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Holly Hedges.—The time for planting Holly hedges is a point about which cultivators differ and probably a factor of equal importance to that of time is the condition of the soil. The present season has certainly not been helpful in obtaining good soil conditions and much planting had necessarily to be deferred. Where sites have been prepared for Holly hedges the Holly may be planted at the present time with every hope of success.

Irises.—A garden without Irises would be robbed of much of its charm and beauty, for various members of the genus provide the garden with flowers during the greater part of the year. The beautiful moisture-loving Irises of the far East are best grown on the outskirts of a lake or pond where their lower roots will never be dry. I. Kaempferi when well established makes a wonderful display in June and July, and its varieties have a marvellous range of colour with almost every shade and combination, from deep purple to pure white. All authorities on this plant recommend a top-dressing of cow manure at this season, and nearly all growers are unable to follow this advice owing to inability to obtain it, but the principle is good, and the difficulty can be overcome by substituting decayed vegetable manure which is equally beneficial. If new plantations are to be made the Irises should be planted now in deeply worked, well-enriched soil. Although this plant is moisture-loving it should not be grown in water-logged soil. The members of another group of Iris from Eastern China and Siberia are suitable for growing in association with I. Kaempferi near the water, viz., I. sibirica and I. orientalis and their varieties. Although the flowers of these species are small compared with those of I. Kaempferi, the inflorescences form pyramidal spikes bearing a large number of flowers in various tints of blue and white, the whole producing sheets of colour. In contrast with these violet and blue shades, the white and yellow of I. ochroleuca is excellent, and our native yellow flag I. Pseudacorus is handsome and effective, both on account of its clear yellow flowers in summer and decorative seeds pods in autumn.

Iris unguicularis (stylosa).—I doubt if there is any other plant of which it can be said that it flowers in the open, in all but very frosty weather, from November to April, yet this is no over-statement in the case of this charming Algerian species. Nothing could be more beautiful than its clear cut purple flowers thrown up through a wealth of foliage which helps to protect the buds from slight frosts. Plantations which have become overcrowded may now be lifted, divided, and replanted as new growths are about to commence. The ideal position for this plant is a narrow border at the foot of a south wall, but it also succeeds in similar positions in east and west aspects, so that any plants remaining after the better positions are filled may be freely planted in other sites. It should be borne in mind that such positions benefit comparatively little from normal rainfall, and it will be necessary to water newly-divided plants until they are re-established.

Iris germanica.—Recently planted beds of this popular group of Irises should have the soil lightly stirred between the plants, and beds which have not been disturbed for some time will derive benefit from a dressing of bone-meal. It is true that these plants thrive to a degree in poor soils but they readily respond to generous treatment.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Asparagus Sprengeri.—As a basket plant this is not to be despised and when Nepeta Glechoma (syn. Glechoma hederacea variegata) is associated with it, a pleasing effect is gained.

Euphorbia jacquiniaeflora.—With a view to obtaining suitable cuttings, which should be rooted early in May to provide flowering plants for next winter, the old stools of this Euphorbia which have been resting should now be cut back and be placed in a light position in a house having a night temperature of 60°. The production of sturdy, short-jointed cuttings is desirable. Afford sufficient water to the roots to moisten the whole ball of soil, but guard against overwatering, and syringe the plants two or three times each day.

Propagation of Winter-flowering Plants.—In establishments where there is a demand for a wide and varied supply of winter-flowering plants, some of the most useful and decorative subjects for the purpose should now be propagated. Amongst these, and one that is desirable for the decoration of large dinner tables in late autumn and early winter, is Plumbago rosea and its companion P. coccinea superba. Whilst the old plants may be grown on successfully for a year or two, in common with most winter-flowering stove and greenhouse plants, the best results are obtained from young stock propagated in spring and grown on without a check. Young, rooted plants may be procured from the base of the plants which have been cut back and started in heat, or, if these should prove insufficient, cuttings of the young shoots will root readily when inserted in small pots, filled with a light, sandy mixture containing a liberal proportion of peat and placed in a propagating frame in the stove. Grow the plants on in a warm house and pinch the young shoots several times throughout the summer, re-potting them as required. Pots of five-and-a-half-inches diameter will be large enough at the final potting of the spring-struck plants. Great care must be exercised in watering this plant, guarding against an excess of moisture. As the foliage is subject to attacks of thrips and red spider, the syringe should be used freely on all favourable occasions.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Disbudding Apricots.—The Apricot is usually the first fruit tree in bloom and the earliest to need attention in disbudding. First remove the young shoots that are developing on the side nearest the wall and those that stand at right angles to the face of the tree. No hard and fast rule can be laid down with regard to the thinning of the other shoots; this should be done sparingly in view of the liability of the branches to die. In view of this all the side shoots that can be conveniently trained in without over-crowding should be retained. The thinning of the fruits should be done by degrees; all twin fruits should be reduced to one and small fruits removed so soon as it can be conveniently done; the thinning of the other fruits should be continued as they develop until the required number is left for the crop.

Peaches and Nectarines.—So soon as the young growths of Peach and Nectarine trees are large enough these also should be thinned. Remove the foreright shoots and undergrowths first, and in a few days disbud again but not so severely as to give a check to the trees. The final disbudding should be completed before the trees are far advanced in growth. At that time the fruits will be large enough to permit of thinning them, which should be done by degrees until the tree is furnished with fruits at a suitable distance apart, allowing for some fruits dropping at the stoning period; this applies more to the Nectarine than the Peach. So soon as the thinning is completed give the border a sprinkling of artificial manure at the rate of two ounces to the square yard and work it into the soil with the fork in showery weather, and if rain does not fall the borders should be watered, choosing a warm day for doing this. Leaf-curl is very troublesome to Peaches in some gardens, especially when cold east winds prevail late in the spring, but when necessary precautions have been taken by spraying for leaf-curl it should not give much trouble. "Medela" is a good and reliable spray for this disease and should be applied before the buds burst.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Vines.—Early vines that have set their berries should now have the surplus bunches removed as quickly as possible. As a rule, ten to fourteen bunches per rod is a good crop for all purposes. Thinning Grapes requires a good deal of practice and experience, complete knowledge of the varieties, and concentration of the mind of the operator. Free-setting varieties require thinning immediately the berries are set, but the thinning of Muscats and shy setters is best deferred until the most promising berries are perceived. If possible, and time permits, it is better to go over the bunches twice, cutting out in the first instance all berries in the centre of the bunch and those that are badly placed. It is essential, in thinning Grapes, never to touch the berries either by the hand, head, or scissors. Leave plenty of berries on the top of the bunch where there is ample room for them to swell upwards. I do not tie the shoulders up as is often practised, as when this is done the bunch never finishes so properly as when the shoulders are allowed to grow into position. So soon as the whole house is thinned, lightly prick up and clean the borders, and apply a mixture of half-a-pound of muriate of potash, one-and-three-quarter pound of dissolved bones, and half a pound of bone-meal, at the rate of two ounces per square yard. Keep the floor and walls constantly damped, using manure water at seven p.m. Endeavour by careful stopping of the laterals and ventilating to ensure plenty of good, thick, leathery foliage. Watch the hot-water system closely and on no account allow the pipes to get very hot.

Apricots.—If Apricot fruits have set freely remove those that are small and badly placed, leaving the final thinning until after the stoning period. Allow a final distance of nine inches from fruit to fruit. Give the trees a good syringing twice daily, and do not close the house until after four p.m. on bright days. Keep the borders well supplied with tepid water and do not use stimulants until after the final swelling of the fruits. Keep the shoots well pinched and the leaders trained in for extension. Keep a sharp watch for the caterpillar of the Apricot moth; this will be noticed by the drawing together of the young foliage. A sharp squeeze of the finger and thumb will kill this pest. Admit plenty of air on all possible occasions, and do not practice hard forcing. Keep the floors well damped and all dry spaces moistened, as this will greatly assist in keeping down red spider.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville,
Polesden Lacy, Dorking.

Tomatos.—Plants of the earliest batch of Tomatos are growing freely and the flower trusses are opening fast. Use a soft brush or rabbit's tail to pollinate the flowers, as there are few insects so early in the year to distribute the pollen. Plants of the second batch are ready for placing in their fruiting quarters, where they should be kept growing freely in a house having a temperature of 60°. Those for growing in the open will now be fit for potting into 60's from the seed-pots or seed-pans. The soil for the final potting of Tomatos should never be excessively rich, as this is often the cause of rank growth and poor fruiting.

French Beans.—A sowing of French Beans should be made in a cold frame to follow the crop grown in heat. It is rather early to risk sowing out-of-doors unless in a very warm spot and where convenience exists for protecting the plants from late frosts.

Celeriac. — The seedlings are ready for pricking off into boxes or frames. Keep them close for the first few days until air can be gradually admitted. When the plants are large enough and the time has arrived for planting them in the open set them in ground that has been well trenched and manured, as this vegetable responds to generous treatment.

Corn Salad.—Make a sowing of Italian Corn Salad out-of-doors in rows made one foot apart. This salad should be more extensively cultivated as it makes a welcome change to green saladings, and, used in conjunction with young Beetroot, forms a useful dish at all seasons. It requires little attention beyond occasional hoeing between the drills, and if a liberal further sowing is made in the autumn a good supply may be maintained through the winter, as the plant is perfectly hardy.

Runner Beans.—Those who grow Runner Beans in trenches should prepare the latter, so that when the time for sowing arrives next month everything will be ready. Plenty of farmyard manure—cow manure for preference—should be worked into the trenches to ensure good, strong growth, and to assist the plants to withstand drought in dry weather.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale,
Lowther Castle, Penrith, Westmoreland.

Rock Garden.—Growth is now apparent in many young alpines propagated from cuttings in the autumn; they may now be taken from the cold frame and planted in their permanent quarters. The present is a suitable time for top-dressing any plants that may require this attention. A suitable compost consists of two-thirds loam and one-third leaf-mould mixed with a libera quantity of sharp sand or other gritty material. In the case of lime-loving plants, especially the Saxifrage family, crushed mortar rubble may be added to the mixture. Pass the soil through a half-inch sieve before using it; for some of the smaller plants the material used for top-dressing may be passed through a quarter-inch sieve. Before applying the soil the surface ground should be carefully stirred with a small weeding fork.

Sweet Peas.—Young plants of Sweet Peas that are sufficiently hardened may be planted out-of-doors. If cold winds and low night temperatures prevail afford the plants suitable protection; a few short Spruce branches arranged around the plants will suffice.

Early-flowering Outdoor Chrysanthemums.—Plants of these, if well rooted and pinched, should be hardened in order to have them ready for planting out early in May.

Beetroot.—The main crop of Beets may now be sown. The ground should be well worked with the fork, the drills drawn twelve inches apart and the seeds sown evenly and thinly. Moderately rich ground is best for this crop, but do not grow Beetroot on ground that has been recently dug and enriched with fresh farmyard manure.

Culinary Herbs.—The present is a suitable time to make an examination of the ground allotted to herbs, increasing and transplanting where necessary. Nearly all herbs are easily raised from seeds, which may be sown now in boxes and germinated in a cool frame. The seedlings may be transplanted on a border when they are large enough to handle. Mint is always in demand and may be increased by root division; it may also be increased by cuttings placed under a hand-light. This plant requires a moist position. Sage and Thyme may be raised from cuttings in the autumn in cold frames. A good supply of herbs can only be maintained by annual propagation and giving the plants regular attention.

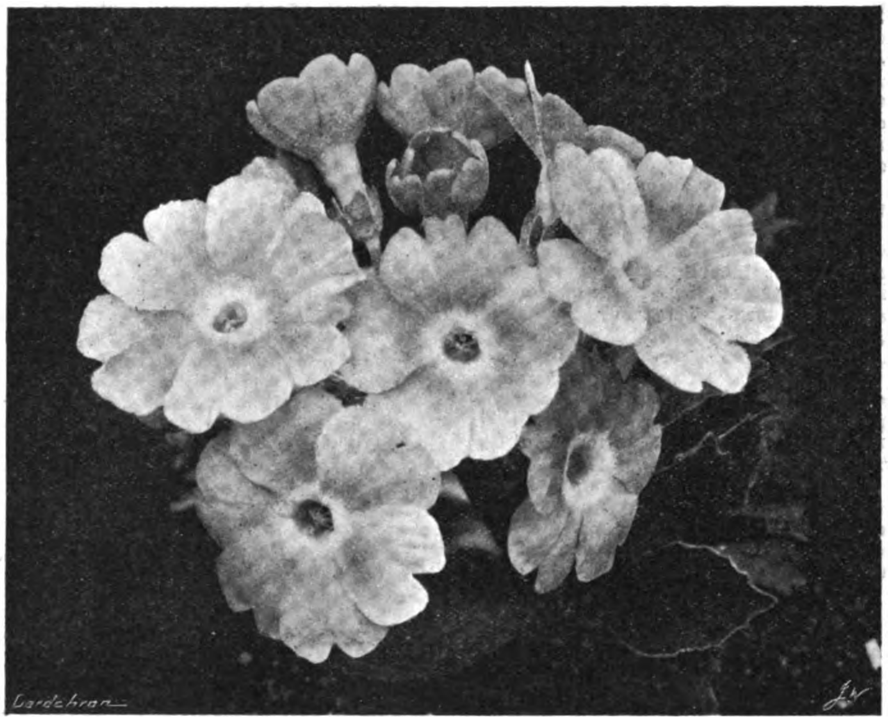

FIG. 107.—PRIMULA BARBARA BARKER.

R.H.S. Award of Merit, April 7 (see p. 259).

FLORISTS' FLOWERS.

THE DAHLIA.

The oldest living members of the gardening fraternity can remember when only two types of Dahlias were considered worthy of note, namely, the Show and the Fancy varieties, but at the present time it is difficult to understand just how many groups there are, and it may be of interest to observe that the catalogue of a well-known raiser includes Single, Parisian Single, Paeony-flowered (large and miniature sections), Decorative, Star, Camellia-flowered, Clematis-flowered, Anemone-flowered, Cactus, Collerette (and a still newer form of "double" Collerette), Pompon, and the popular, dwarf, bedding, Mignon group. Each class includes numerous varieties, and one is compelled to study such a classification in relation to decorative gardening. It is the firm belief of many growers that the Dahlia will soon become more popular than it is at present; indeed, a fashion in these flowers would certainly do much towards "brighter gardens."

The Mignon varieties have become very popular, and there are several strains and varieties of these bedding plants now in cultivation. The best of them are sturdy, but compact, in growth, and their average height of eighteen inches adds to their value for massing in beds and "ribbon" borders. The variety Coltness Gem and the Coltness hybrids have, perhaps, been responsible to some extent for the revival of interest in bedding Dahlias. These are both interesting and pretty, but I do not believe we have seen the best of their type yet. An interesting feature of some seed lists during recent years has been the offer of seeds of this dwarf type of Dahlia. A mixed strain is usually offered, and from seedlings it is possible to procure quite a good display of flowers of various forms. One naturally expects to find a few plants of little or no account, but often some good things result, and, if superior, their tubers may be saved in the ordinary way.

Cactus Dahlias are a popular class, but many varieties produce their flowers so low down among the foliage that their effect is lost. Happily, this is not so in the case of newer varieties, and the best forms are those which display their flowers well above the foliage on stiff, wiry stems. Mary Purrier, Ensign, Richard Box, Amos Perry, C. E. Wilkins, and Excelsa, are all good varieties of this class; whilst the later introduction, Mrs. E. Lowes, which I believe came from Crawley, is a fine Dahlia, bearing flowers of striking brilliance. The colour is a very rich yellow, and this may restrict its popularity to some extent, for yellow does not seem to be a favourite colour with every one.

Decorative Dahlias form a group consisting of free-flowering varieties of an intermediate and mixed character, and perhaps these have been most employed of any for general purposes. The vivid pink variety, Mr. H. C. Drusselhuys, comes to mind; it has a fine, erect habit and the freedom with which the striking blooms are produced is a quality strongly in its favour. But there are others no less beautiful, and it is only necessary to mention such varieties as Porthos, King Harold, White Cloud, Mr. Ferris, Princess Juliana, and De Rose.

Single Dahlias make a brilliant display in the garden. Their habit of growth renders them adaptable for floral decorations, but, unfortunately, the fleeting character of the blooms of most varieties, especially the older ones, is against their use in this way, the florets quickly falling unless the blooms are gathered quite young.

Pompon Dahlias include a few varieties of outstanding merit, and, as a personal choice, I refer to Regulus, with rich, rose-purple flowers; White Aster, Janet, the vivid orange Electra, Irene, and the pretty, purple-tipped Maud. The flowers of all these sorts are small and symmetrical, and their formal compactness appeals to many people, while their long, stiff, erect stems make them useful for cutting.

The Collerette class has become popular, and deservedly so, for some very beautiful Dahlias are included in it. Joan, Rhoda, Swallow, Henri Farman, Lucien, and the beautiful, dark-coloured Admiral are but a few of the many delightful varieties of this type. Last year I saw a very pretty form named Mrs. O. M. Courage, and was charmed by its effect. The flowers are of carmine colour into which white is beautifully toned; it also has a pure white collar. I had not seen this Dahlia before, and have since found that it was introduced only a year or two ago.

Star Dahlias have received a good deal of attention lately, thanks to the efforts of Messrs. J. Cheal and Sons. Their first introduction, Crawley Star, was a creditable accomplishment, but they have brought out others since then, and there are now quite a number to choose from. The Star varieties are, perhaps, more useful than any others for cutting purposes. The flowers are light and elegant, and the range in colour is gradually becoming wider, hence the importance of the class cannot be ignored. White Star is one of the oldest of these Star Dahlias, and still one of the best. The blooms are carried well above the foliage on stiff, wiry stems, and they are ideal for indoor decorations as cut flowers.

The Camellia-flowered, Clematis-flowered, and Anemone-flowered types are worthy of mention, and two important and beautiful varieties of the first-named group, namely Reginald Cory and Crimson Flag, are Dahlias of exceptional merit that have become popular for massing in beds and borders, for which purpose they are admirably suited.

Dahlias, whether planted in beds or borders in conjunction with other plants, or in groups by themselves, may be made to contribute greatly to the beauty and effect of the garden. Their cultivation is not difficult if strong plants are ready for planting so soon as danger from frost is over. *W. A. Stenning, Gloucestershire.*

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

SCHIZOPETALON WALKERI.

This interesting Chilian plant, although not showy, is worth growing for the small greenhouse. The white flowers, with their cut and fringed petals, are freely produced, and are fragrant during the evening. The successful cultivation of the plant presents no difficulty; seeds may be sown during March in a cool greenhouse, and when large enough to handle the seedlings should be pricked off singly into small pots; this should be done with care as the plant resents disturbance at the roots.

Subsequent cultural details consist in potting on as required, until the plants are in five-inch pots, in which they may be flowered. Water should be afforded the roots carefully until the plants are well-established. Schizopetalon Walkeri grows freely in any fairly light and well-drained compost.

SEMPERVIVUM ANNUUM.

This annual promises to be a very useful subject for greenhouse decoration, as its inflorescences of yellow flowers are produced very freely, and the blooms last in good condition for a long time.

Seeds should be sown about the middle of September in a greenhouse with a winter temperature of about 45° to 50°. The seedlings should be pricked off singly into small pots, or three may be placed in a pot. They should be grown in a fairly dry and airy position, a shelf near to the roof-glass suiting them very well during the winter. As they possess fleshy, succulent leaves watering should be done carefully during the winter. Early in the New Year the young plants should be ready for potting on. If single plants are desired they will flower in forty-eight-sized pots; if three are grown together, receptacles six inches in diameter will be necessary. This Sempervivum grows freely in any good potting compost, rendered free and open by the addition of coarse sand or old mortar rubble.

STATICE.

This genus includes several species that are very important for decorative purposes.

Statice sinuata, with blue flowers of an everlasting character, is largely grown for the market; there are varieties with white- and rose-coloured flowers. The seeds should be sown in a cold frame or cool greenhouse about the middle of September, and again during February and March, if a succession is desired. The seedlings should be pricked off singly into small pots and given the treatment accorded this class of plant. There should be no difficulty in wintering these Statices successfully, as they are by no means exacting in their requirements. During the spring the plants should be placed in their flowering pots, those of five-inches diameter serving very well for the purpose. This species grows freely in any good potting compost, and is very useful for supplying cut flowers, as well as for general decorative purposes.

Statice Bonduellii has yellow flowers, and somewhat resembles the foregoing species; it also resembles S. sinuata in general appearance, but does not grow quite so tall. It succeeds under the same treatment as afforded S. sinuata.

Statice Suworowii, with its tall, closely set spikes of rosy-coloured flowers, is a very different-looking plant; it is a native of Turkestan, and, although introduced in 1883, it is only during recent years that the merits of this beautiful plant have been generally recognised, and it is now largely cultivated by market growers.

It is by no means so easy to cultivate in pots as S. sinuata, although its successful cultivation presents little difficulty to the skilled cultivator. As in the case with other plants of this class, the seeds may be sown about the middle of September, again during February or March, and finally towards the end of June for a late summer and autumn display. This plant resents root disturbance, and when fit to handle should be pricked off singly into small pots. Autumn-sown plants are best wintered in a greenhouse where the atmosphere is dry and buoyant. The plants should be grown near to the roof-glass.

Early in the New Year, the autumn-sown plants should be placed in large receptacles, those five-inches in diameter being suitable. After re-potting them, watering should be done very carefully until the roots are established in the fresh compost. Care in watering is essential when the plant is in flower.

This Statice grows freely in any good, well-drained potting compost. The flowers of a batch of plants usually show some slight variation in colour, while sometimes a white-flowered form appears. Seeds should always be saved from plants of good habit and colour. Statice superba is sometimes offered as distinct, but in my experience it does not differ in any respect from S. Suworowii. Statice spicata has pink or white flowers, and succeeds under the same treatment as afforded S. Suworowii.

SUTHERLANDIA FRUTESCENS.

This plant is known as the Scarlet Colutea and has orange-scarlet flowers and inflated seed vessels. It is a graceful South African species frequently used in summer bedding; it is equally useful for decorative purposes in the greenhouse, and for the latter purpose it is usually treated as an annual. The seeds are best sown during February in a temperature of about 60°. The seedlings should be pricked off singly into small pots, afterwards potting them on as they require more root room until they are in five-inch or six-inch pots, in which receptacles they may be flowered. As they increase in size they should be gradually accustomed to greenhouse conditions. Sutherlandia frutescens grows freely in any good potting compost. With its fine, grey-coloured foliage and small, bright Pea-shaped flowers, this plant presents a very elegant appearance and is worthy of more general cultivation. *J. Coutts.*

ORCHID NOTES AND GLEANINGS.

SCHOMBURGKIA UNDULATA.

A fine spike of this elegant species, bearing a terminal head of about fifty flowers, is sent by Messrs. Stuart Low and Co., Jarvisbrook, Sussex. The flowers, which are one-and-a-half-inch across, are borne on pedicels three inches in length. The narrow, reddish-purple sepals and petals are undulated at the margins. The three-lobed lip has the side lobes erect; it is rose-coloured, the middle lobe purple, with a white disc on which are five raised lines.

Schomburgkia undulata is a stately species of Laelia-like growth, discovered by Linden near Truxillo, in Venezuela, in 1841, but has since been recorded from high elevations in New Granada.

S. undulata first flowered with the late Segismund Rucker, at Wandsworth, in 1844.

CYPRIPEDIUM OPAL.

Following a strain of Cypripediums which was raised at Oakwood, and for which Awards of Merit were obtained in 1905 for C. San-Actaeus and C. Sanacderae (insigne Sanderae × San-Actaeus), by crossing the latter with C. Moonstone (longwoodense ×

Mrs. F. Sander), Clive Cookson, Esq., Nether Warden, Hexham (gr. W. J. Stables), has produced a very pretty and distinct hybrid, named Opal, a flower of which is now received. The dorsal sepal is pure white, with a rose flush on the lower half. The lower sepals are wholly white and the extended petals white with a rosy-mauve flush on the inner half, darkest at the base, where it extends in a dotted line to the middle.

The yellow tint of C. insigne Sanderae is strongly shown on the ivory-white ground of the lip of the new hybrid. The substance of the flower is firm and its surface glossy.

ORCHIS FOLIOSA.

COMMENCING a few years ago with a single root of this fine Madeiran Orchis we now have quite a colony of plants in a moderately cool bed of vegetable soil in the part shade of some Alders.

Although this Orchis will spread naturally to some extent, we have found that it is better to lift, divide and replant the clumps every few years immediately the foliage begins to go off in the late summer.

The bright green, strap-like leaves of O. foliosa appear in early spring. The noble flower heads of rich velvety purple develop about a month later and often continue into the first weeks of summer.

Though a moisture lover this splendid species will grow well in borders where the soil is deep, rich and moderately cool; but a little shade from the hottest sun seems desirable. In north Wales I have found O. foliosa to be perfectly hardy, but a winter covering may be advisable in bleak localities. *J., Ro-Wen, Talycafn, N. Wales.*

INDOOR PLANTS.

COLUMNEA.

COLUMNEAS are old garden plants, C. scandens, a Guianan climbing species, having been introduced over 160 years ago. The hybrid Columneas raised by M. Lemoine, Messrs. Vilmorin, Andrieux et Cie, and by British growers have revived interest in the genus, which, in general appearance, cultural requirements, and floral effectiveness, resemble the once popular Aeschynanthus.

A noticeable feature of the small-foliaged species of Columnea is the abnormal size of the flowers. Columnea gloriosa of gardens, a slender-stemmed, trailing plant with opposite, fleshy, hirsute leaves, one-inch long by half-an-inch wide, bears solitary, erect, bright scarlet flowers three inches high. The blooms are borne freely along the pendent growths.

C. microphylla is similar in habit to the above. The foliage is small, as the specific name implies, and the hooded, gaping, scarlet flowers are spotted with yellow.

C. Oerstediana (Fig. 108) has scarlet flowers, and is distinct from the above-named species. Its wiry, much branched, arching stems are clothed with small, glossy leaves.

C. vedrariensis, a hybrid between the erect growing C. magnifica and the climbing C. Schiedeana, is stiffer in habit, with thicker stems, larger leaves, and scarlet flowers, pencilled with yellow lines.

Columneas are essentially tropical subjects, and during their growing season need a considerable amount of heat and moisture. They are usually grown in pans or baskets suspended from the roof-rafters, and require a spongy compost of peat or fibre and Sphagnum moss. Propagation is effected by cuttings, which root readily when inserted in a brisk bottom heat. The leafless stems cut into lengths of about two inches and inserted as cuttings will form roots, and top growth will develop from one of the dormant buds at the apex. *Fred W. Jeffery.*

CROWEA.

CROWEA saligna and C. angustifolia are two beautiful Australian shrubs which are very useful for the decoration of the greenhouse. Although cuttings of these Croweas may be rooted in sandy peat, these plants never grow very freely on their own roots; it is, therefore, best to graft them on young stocks of Correa alba or Eriostemon, standing the plants in a close case in a cool house until the stock and scion unite.

When the grafted plants commence to grow freely they should be pinched on frequent occasions to promote a bushy habit.

The compost for these plants should consist of a mixture of two parts peat and one part of sandy loam, with sufficient sand to render the soil porous.

Croweas should be grown in cool, airy conditions at all times, and, in common with all hard-wooded plants the watering of the roots must be done carefully.

ALOYSIA CITRIODORA.

THE Lemon-scented Verbena makes a good subject for the cool conservatory, and is a favourite on account of its refreshing fragrance. Large specimens that have been pruned hard will, if placed in a warm greenhouse and kept close and sprayed during bright weather, soon start into growth, and as growth advances the plants should be given more air.

Many cultivators complain that this plant is difficult to root, which is quite true if hard, matured shoots are used as cuttings, whereas young, half-ripened shoots root readily in the spring in a close case.

When this plant is grown indoors it is attacked by white fly and this must be guarded against. *J.*

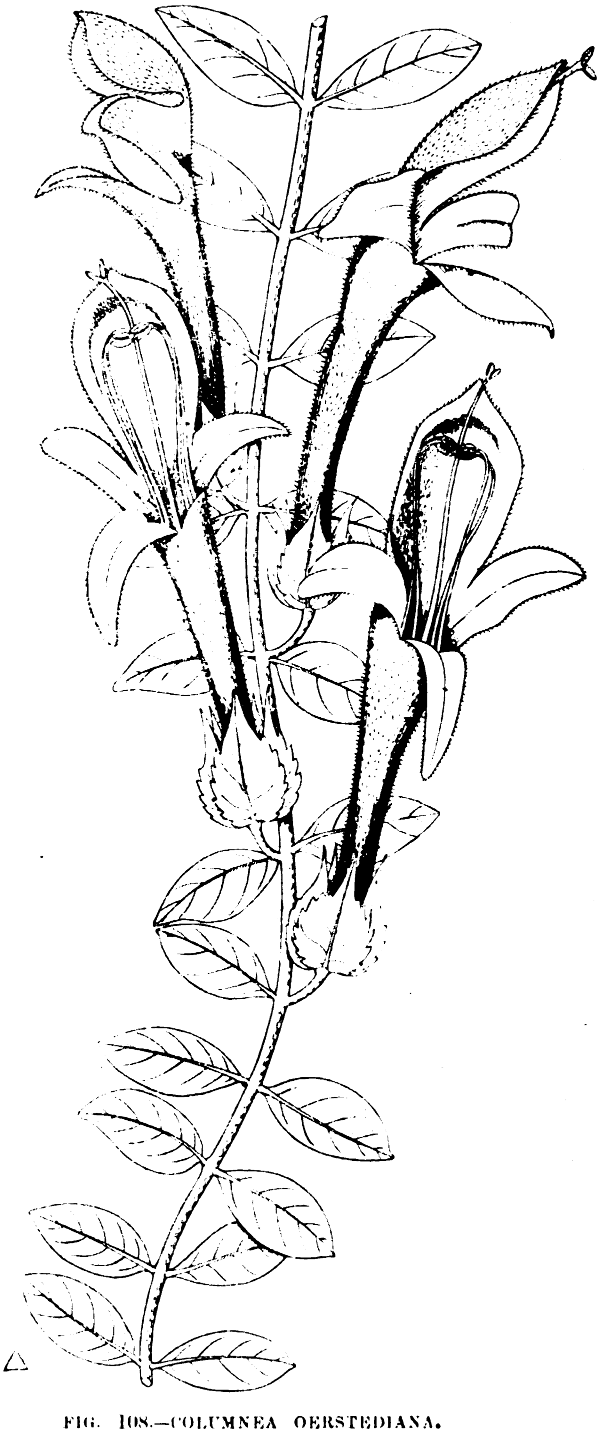

FIG. 108.—COLUMNEA OERSTEDIANA.

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THE STORY OF PERRY PEARS.

AT the annual exhibition of the Gloucestershire Root, Fruit and Grain Society in November last, there was an unique class in which prizes were offered for collections of perry Pears. The number of dishes to be shown was unlimited, and one exhibitor staged thirty-six varieties that were supposed to be distinct. As a matter of fact, I do not think they were, but, at any rate, they were all known by different names, and there was nothing but appearance to suggest that any two or more varieties shown were the same, as there was no means of comparing the growth and habit of the trees. From a spectacular point of view there was nothing attractive about the display, as the Pears were mostly small, some of them excessively so, with nothing striking about their appearance, and from an edible standpoint they had even less to recommend them. In a word, the insignificant-looking fruits might easily have marked the initial stage in the evolution of Pears, assuming that the recognised dessert varieties in cultivation have been evolved from wild parentage in the first place.

Yet, I think it is safe to say that in no other place in the world outside the western counties could such a collection of fruit have been got together. In this connection it may be observed that the culture of Pears for the making of perry is largely confined to the counties of Gloucester, Hereford, and Worcester, whereas in Somerset and Devon, both famous for their cider Apples, there are scarcely any perry Pears grown. There is something very interesting, too, about these perry Pears which are so closely associated with the history and folk-lore of the counties to which they belong, and in many cases the names they bear indicate the places where they originated.

No nurseryman or scientific raiser can claim credit for the introduction of perhaps even a single perry Pear, but, on the other hand, they simply came in Nature's own way, probably as seedlings which grew up from the "must" thrown out from the perry mill; and it is a curious fact that, while there are so many different varieties of perry Pears to be found in orchards, there has apparently been no increase to the number for a generation, or even longer.

There is something very venerable about the appearance of an old perry Pear tree, and the majority of them, by the way, are old. It has girth of stem and spread of branch equal to those of a forest tree, and about half-way up the stem there is a ring and swelling in the bark which are rather puzzling to those who do not know that the ring and swelling, still conspicuous after a century or more, mark the point where the variety was grafted on to the wild Pear stock that was in the first place planted in the orchard for the purpose. The old perry Pear trees seem to be of the same time and generation as the grey, old village churches, the half-timbered farmhouses, and the massive barns with which they are associated. They belong to an age, in fact, when commercial fruit growing was unknown, and as you look at a giant tree you wonder how many tons of Pears it has borne and how many hundred gallons of perry have been squeezed from the fruits. The old trees, in fact, have kept much the same, while men have lived and died in successive generations and local habits and customs have changed entirely.

Generally speaking, the perry Pear trees are growing in grass orchards, but here and there one sees mighty specimens in rows on arable land. The presence of the trees under the latter conditions is a bit of history, because they point to a period when most of the land was arable and grew corn, and in order to produce the fruit to make perry the trees had to be planted on ploughed land. That the conditions have suited the trees is proved by their large size and the crops of fruit they produce. The wild vigour of perry Pears seems to render them immune to the insects and diseases which attack more edible varieties, and while in some seasons crops are light and in others heavy, the failure of the perry Pear crop can generally be traced to climatic causes rather than the ravages of insect pests or disease. As in the case of dessert varieties, some perry Pears ripen as early as a Williams's Bon Chrêtien, while others keep firm until nearly up to Christmas, which means that perry-making may extend over a long period, and considerably more juice is extracted from perry Pears than from cider Apples.

It would be very interesting to know just how, and by whom, these perry Pears were originated, and in respect of some of them the late Dr. Hogg obtained local information, which appears as footnotes to the description of the varieties in his famous *Fruit Manual*. As an illustration, Hogg tells us how the Barland Pear, known to everybody who has any knowledge of perry, got its name from Bare-land's Farm, in Hertfordshire, where it originated, no one knows how long ago. Then there is the Oldfield, a Gloucestershire Pear, which produces a sparkling perry that is a drink for the connoisseur; and Malvern Hill, the earliest perry Pear to ripen, which, as its name implies, originated somewhere in the vicinity of the famous Worcestershire beauty spot and health resort. The Norton Butt is another well-known perry Pear, and in an orchard in the village of Norton, a few miles from Gloucester, the spot is pointed out where the first tree of this variety is supposed to have grown. There is a village by the Severn side, on the outskirts of the Forest of Dean, called Blakeney, and named after this village there is a Pear called the Blakeney Red. As a perry Pear it is not so good as some others that are less attractive, but the Blakeney Red has colour and is a fair size, and—like the sparrow that is painted yellow to make it a canary—these Pears have appeared in fruiterers' windows under the names of much superior-eating varieties. During the war boom tons of these Pears were sold in wholesale markets at prices up to a shilling a pound, and hundreds of pounds sterling were made out of a few big trees. In the past, Blakeney Reds have made their way even to Covent Garden Market, thence to costermongers' barrows. One of these itinerant merchants is credited with having named the Pears "one bites," because he noticed that his customers after buying a bag of Pears took a bite out of one of them and threw the rest in the gutter.

One could go on at length describing local perry Pears, but I have written enough to show that they are of more than passing interest, while to-day they are of greater commercial value than for many years, because a ton of perry Pears will furnish a lot of juice, which is as good as cider when fermented, and, as a matter of fact, the untrained palate cannot distinguish the difference between the two beverages.

Referring back to the propagation of perry Pears, I arrived not long ago at a farmyard just in time to rescue an interesting relic of the above process. An old perry Pear tree had died and the trunk was being sawn up and split into logs for firewood. In the middle of one of the logs, which was in fact the middle of the tree trunk, was the top of the original stock on which the Pear had been grafted a century or more ago. The stump was about the thickness of a broom handle; two grafts had been inserted in the rind, just as they are to-day; one scion had grown into the tree, which had lived for certainly more than a hundred years and borne many tons of fruits, while the other graft had died, but it had remained all those years surrounded by the wood of the tree in the position where the grafter had placed it. There was the small, thin graft with the sloping cuts still clearly showing and even some remnants of the material used for tying the scions. This relic of the art of grafting is, of course only a curiosity, but I prize it nevertheless as an interesting link between the past and present in the cult of the perry Pear. *G. H. H.*

TREES AND SHRUBS.

RHODODENDRON SPINULIFERUM.

RHODODENDRON SPINULIFERUM (see Fig. 109) has flowers unlike most members of the genus, for instead of being widely expanded they are tubular, with the stamens exerted for some considerable distance through the corolla tube

This curious Rhododendron was discovered by Abbé Delavay in woods near Tonghay, Yunnan, and M. Decloux sent seeds to M. Maurice de Vilmorin in 1907, from which the first plants were raised in Europe, and from France the species was introduced to Kew in 1910. This Rhododendron was found subsequently by Forrest on hills north-west of Yunnanfu, south-west Yunnan, at an altitude of 6,000 to 8,000 feet. Although the plant is a native of such high altitudes, it is not perfectly hardy in this country; it will doubtless succeed out-of-doors in warm districts, especially if planted at the foot of a warm south wall. Specimens in Mr. J. C. William's gardens at Caerhays, Cornwall, flower well in the open, the season of blooming out-of-doors being April.

Rhododendron spinuliferum forms a thin-habited shrub about eight feet high with leaves disposed evenly along the twigs, and not in whorls as is usual with Rhododendrons. The foliage is wrinkled above, and there are a few grey hairs and scales on the undersurface; the name spinuliferum obviously refers to the narrow spinules on the margins of the foliage. The flowers are red and resemble those of R. Keysii, which, however, are brick-red, a much finer shade, with five yellow points. The species under notice has also affinities with R. spiciferum and R. scabrifolium. The plant is figured in *Bot. Mag.* t. 8,408, and the plate shows the flower-bearing stems a violet-purple colour, yet the text states that the bark is reddish-brown.

SALIX WALLICHIANA.

After observing this Willow for several years I feel disposed to give it enthusiastic commendation. Throughout the year it has some attractive character—in the winter, when the shoots are decked with red, sealed buds, or now, when in flower, or later when bearing its distinct foliage.

During the past three weeks the coloured scales which enveloped the buds have been gradually thrust off, and the silvery, furry catkins displayed, which in a few days will be showing the rich, yellow stamens; every branch has a full quota of flowers.

This Salix is a rapid grower, making shoots three feet long, more or less, in a season, and it soon develops into a big bush or small tree. The green bark of the main stem remains smooth for a number of years; that of the current season's wood is smooth and polished, willowy, but not extra pliable, and purple-coloured on the surface exposed to the sun.

The leaves are three to four inches long, ovate, with an extended point; they are brightly green above and silvery pubescent beneath, the pubescence varying according to sex, those of the male plant being less so than those of the female. The foliage remains on the plant until late in the season. This Salix is known as the Himalayan Willow, and it penetrates into W. China, where Mr. E. H. Wilson met with it and recorded it under different numbers. Possibly the Chinese form is hardier than the Himalayan; that I am unable to testify, but I have seen flowers of the former occasionally damaged by late frosts and the leaves partially blackened by early winter frosts.

Multiplication of this Willow is easy, and shoots merely cut into twelve-inch lengths inserted in sandy soil outdoors in the autumn root and make plants during the course of the year.

The future requirements of the plant would be mainly in providing it with a moist position. *C. F. C.*

TREE PAEONIES.

The Tree Paeony, Paeonia Moutan, is one of the most gorgeous of flowering shrubs, yet far from common in gardens. It is a gross-feeding plant and delights in a deep loam enriched with a liberal supply of organic manure. An annual mulching of decayed manure should also be afforded the roots. Copious supplies of water are necessary during the growing season, and frequent applications of liquid manure will greatly assist in building up strong plants. Good drainage is essential. These Paeonies resent disturbance at the roots, hence, when once established, they should be left in position for so long as they remain healthy.

Although perfectly hardy, discretion as to position should be exercised, and the Paeonies should not be planted in exposed positions where the young growths would be likely to suffer from late spring frosts. On the contrary, the position in which they are grown should not be too enclosed or the shoots would fail to ripen sufficiently to bear flowers.

Tree Paeonies are lovely subjects for planting on the lawn, and few shrubs produce a more charming effect in the mixed shrubbery border when in flower, their deeply cut and variously tinted foliage giving them additional beauty.

They are also well suited for growing in pots for conservatory decoration. After flowering is over encourage them to make fresh growth; during the summer plunge the pots out-of-doors in a sunny position and give the roots plenty of water. The following are good varieties and give a wide range of colour. Louise Mouchelet, soft pink, very double, large and handsome; Reine Elizabeth, deep salmon-red flowers of good form; Triomphe de Gand, bright rose; Lord Macartney, very attractive, with crimson flowers and conspicuous golden-yellow stamens in the centre; Van Houtte, bright carmine; splendidissima, a distinct plant having white flowers spotted with lilac; lactea, one of the best double white varieties; grandiflora superba, with splendid white flowers spotted with carmine, a variety that deserves to be planted extensively; Henry Irving, Elizabeth, Don Quixote, Jean de Reszke, and Julius Caesar, all of which have exceptionally large flowers of rich and beautiful colours. *W. Auton.*

STACHYURUS PRAECOX.

This early flowering deciduous shrub is blooming very freely this season, and while it is not so conspicuous as many of its neighbours (principally Rhododendrons at this date) it has a quiet charm and grace when viewed at close quarters. The yellow, drooping racemes are arranged somewhat stiffly, reminiscent of the trees on the old "Willow pattern" dishes, but the individual racemes may also be likened to inverted spikes of a yellow Lily-of-the Valley.

Stachyurus praecox is a native of Japan and is quite hardy in this country. My first acquaintance with it was made some years ago in an Oxfordshire garden, where it was unharmed during the severe winter 1915-16. In our milder climate here it grows more rapidly. We tried tying it to a wire-netting fence, but every shoot that touched the wires died, and had to be cut away; whether this was due to the tying or the wire itself would be hard to say, as alongside it on the same fence Rambler Roses proved they had no objection to either.

S. chinensis is a Chinese species more recently introduced, but, so far, there is no very noticeable difference between the two, and both are worthy of a place in the early flowering section of the shrub border, as they are by no means rampant growers, and seldom exceed five feet in height in this country. *A. T. Harrison, Culzean Castle Gardens.*

SPIRAEA THUNBERGII.

This is, I think, the earliest of the shrubby Spiraeas to flower, coming into bloom about mid-March and continuing in flower for a month or more. It is a dwarf species, averaging under four feet in height, with slender, arching branches and pretty, pale-green, linear lancelotate leaves.

The small flowers are produced in the greatest profusion on the old wood, so that the shrub when in full bloom is a mass of white.

S. Thunbergii is perfectly hardy and will succeed almost anywhere; it prefers a fairly rich, cool soil, and should be planted in a sunny situation to ensure thorough ripening of the flowering twigs. It makes an admirable rock garden subject and it is useful there and, indeed, wherever a small and elegant shrub is needed to give light shade from summer sun. *J. N. Wales.*

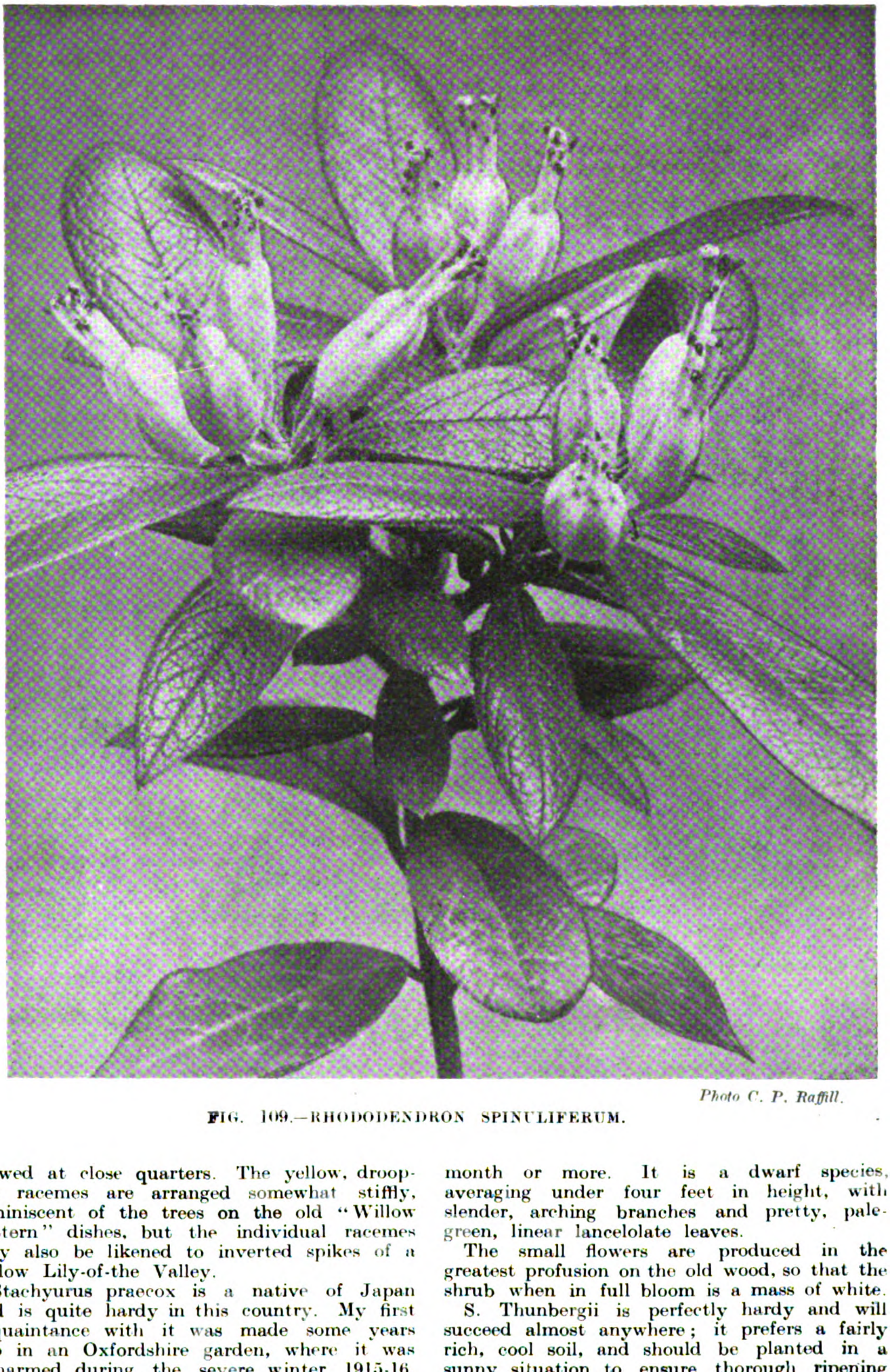

Photo C. P. Raffill.

FIG. 109.—RHODODENDRON SPINULIFERUM.

LILIES OF 1924 IN OTTAWA, CANADA.

Unlike the season in England the weather at Ottawa was better than usual during 1924, in-so-much that there was more rain and less extreme heat during the summer, and, as the soil at the Farm is very sandy and hot, the cooler conditions make a great difference in the garden.

Some Lilium seedlings bloomed for the first time in the season under review, two of crosses of L. testaceum and L. candidum being the most interesting. L. testaceum was the seed parent in each case, and, as neither of these species does really well in this garden, it was a pleasant surprise to get two seedlings to bloom in three years from seed. The photographs were taken July 12, 1924, and the seeds had been sown in the greenhouse on December 6, 1921. In one the flower was glistening white, as in L. candidum, but the petals were narrower and more pointed than in our plants of this species. The anthers, however, were quite distinctive, having the reddish colour of the female parent. In another (Fig. 110) the shape of the flower was practically the some as in L. testaceum, the mother plant, but the petals were glistening white and the anthers golden-yellow.

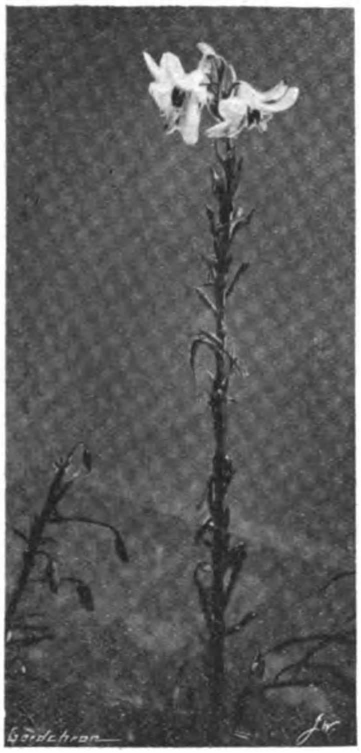

FIG. 110.—LILIUM TESTACEUM ♀ × L. CANDIDUM ♂.

Three years' old from seed.

Of the Lilium tigrinum × L. Maximowiczii crosses made in 1921 six seedlings bloomed in 1924. The flowers seemed to be the same as in the female parent, L. tigrinum, but the foliage, colour of stem, and hairiness varied considerably. The one illustrated in Fig. 111 was the most pubescent. It had four blooms, but the petals of the front one had dropped before the photograph was taken.

Crosses made between L. dauricum and L. Thunbergianum (these are the names given by the nurseryman who supplied the bulbs) gave quite a number of fine varieties of various shades of orange and different types of plants, but no special notes were made of these.

The reports from Guelph of the Lily named George C. Creelman (L. Sargentiae × L. regale) (Fig. 112) were better than ever this year. The plants were five feet tall with fifteen and sixteen large tubular flowers on a stem. From the description and picture of L. centifolium in *The Gardeners' Chronicle* of January 24, 1925, these two Lilies must resemble each other not a little.

L. Davidii, which I understand is the correct name for L. sutchuenense, finds conditions in the garden congenial, and there are some fine plants grown from seeds. It sets seeds very freely, and crosses made between it and L. Willmottiae should bloom this summer. The latter species also does well but the seedlings take longer to grow to blooming size.

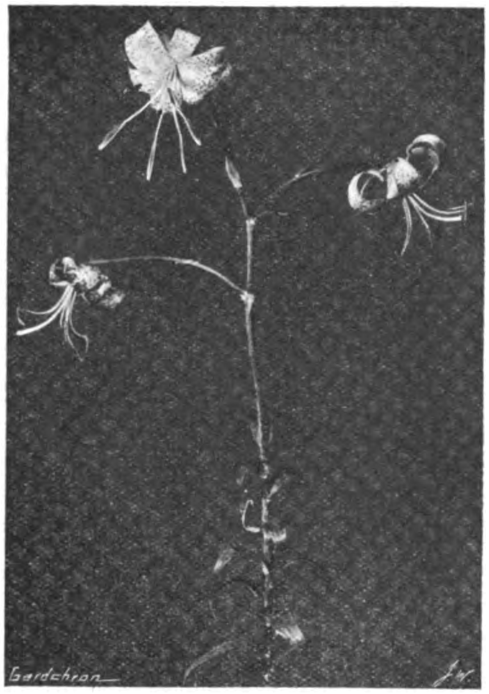

FIG. 111.—LILIUM TIGRINUM ♀ × L. MAXIMOWICZII ♂.

Three years' old from seed.

L. tenuifolium did as well as usual and seeded freely. L. concolor also seems very happy under conditions here, but whether the bulbs will be short-lived because of the amount of seeds formed remains to be seen.

Having found that L. Martagon and L. Hansonii hybrids would fertilize L. Hansonii the pollen was used on a clump of L. Hansonii which grows in the Arboretum of the Division of Botany. This proved very successful and thirty-five stems bore seed pods, practically every blossom pollenised developing a capsule. The photograph (Fig. 113) was taken on August 23, and it is easy to distinguish the hand-pollenised stems from those not pollenised. About five hundred seeds were sown in the greenhouse and the remaining two thousand in the seed-bed outdoors in November. It seemed rather a big risk to leave these seeds out all the winter, but, as those of other hardy species germinate well when so treated, it was decided to try them. Those in the greenhouse started to germinate before the New Year came in. The seed coat is pushed up through the soil first and a tiny bulb is formed before the leaves appear. At the time of writing, February 13, there are a few leaves showing.

L. pardalinum formed a capsule naturally during the season. This species seems to have settled down quite happily in a bed of sandy soil fully exposed to the sun, and, near-by, clumps of L. superbum are flourishing also. *Isabella Preston, Specialist in Ornamental Horticulture, Central Experiment Farm, Ottawa.*

BULB GARDEN.

HYACINTHS.

Hyacinths were the great feature at the first of the special shows of the International Exhibition at Heemstede, near Haarlem, which opened on March 13. This was quite in accordance with the fitness of things, for the Hyacinth is *par excellence*, the flower of Holland. The Dutch have developed the small, slender, sparsely studded spike of the original Hyacinthus orientalis into the many-flowered mass which we know to-day as the Dutch Hyacinth, and which invariably suggests to me the big business-end of a pantaloon's poker. The Dutch can grow Hyacinths in their light, sandy soil, with the water-level so near to its surface, as no other people can, for with its ideal growing ground and the knowledge obtained by generations of practical experience they have a big start over any would-be rivals.

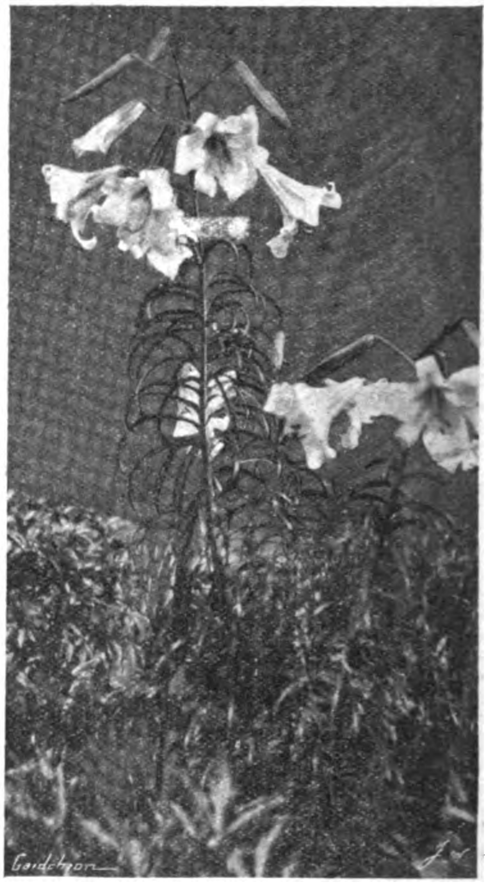

FIG. 112.—LILIUM GEORGE C. CREELMAN.

(L. SARGENTIAE ♀ × L. REGALE ♂.)

From a photo by Mr. H. J. Moore, taken at the Ontario Agricultural College.

The Dutch, too, always keep their eyes wide open and are ready to seize any opportunity that offers to produce novelties. Thus "prepared" Hyacinths have been produced which now to a large extent make up the deficiency in Roman Hyacinths. The last development in this line is the production of "many-flowered" Hyacinths. The idea first occurred to Mr. A. Smith, the foreman of the General Bulb Growers' Company, about twenty-five years ago, and they were first exposed to public view at the first Christmas Bulb Show at Haarlem. The novelty did not find favour at first and the production of these many-flowered bulbs ceased, only to be revived within the last three or four years. They are included in Messrs. Sutton and Sons' bulb list, and this Reading firm is one of the few who list them.

Why are firms so chary about including them? For two reasons. Firstly, they are expensive to produce. A fully developed bulb has to have its flower stem removed and *then* to be grown on for a couple of years. Secondly, because this "growing on" is an extremely difficult job. If on the one hand the treatment is too generous, the flower spikes are too large; and if on the other hand the bulbs are starved too much, many of the new growths will be blind. As there is not much room to spare on either side of the exactly-right line, it requires the greatest care to bring the bulbs safely through their two years extra growth.

So much for general Dutch proficiency in the culture of the Hyacinth. I am now going to disclose the reason for the prominence of the flower at Heemstede, Haarlem, the big Dutch city, which is fast growing larger and larger. Its suburbs are encroaching on every side. Neighbouring villages are threatened; Overveen among the number. The community resolved to give an ocular demonstration to Haarlem's call, "Still there, Overveen?" "Yes, and going very strong." The display in the centre of the Floral Hall was entirely from Overveen and was certainly most impressive. Big men and little men joined forces. Every member of the Dutch Bulb Growers' Association at Overveen lent a willing hand. They did everything amongst themselves. The result was fine. One-hundred-and-twenty varieties were included in the display, which was at once historical and informative. There were numerous examples of almost every variety, arranged in baskets of various shapes and sizes, on a carpet of grass. I have never seen a more important looking group. Those we see from time to time in the R.H.S. Hall in Vincent Square, seem insignificant in comparison with the display at Heemstede.

Two features made this huge group particularly attractive. It was partly historical. I am told the war is responsible for the disappearance of many of the very old varieties—something had to be sacrificed. What more natural than to discard those with no money value? Some which are still with us were amongst those on view. There was, for example, a bright rose and pink variety with every petal tipped with green, called Hofdyk; I was told its day was over, but all the same it was decidedly attractive. Perhaps as striking an example as any was to be found among the yellows. Quite close to one another there were baskets of Prince Hendrik, which was raised within recent years by Piet Voet, of Eremurus fame and an old-as-the-hills double, Goudbeurs or Purse of Gold. I liked the quaint way the long strong spike was hung round with the bright little balls in loose array. As I looked at it thoughts of a distant past came to me—the time of the Hyacinth mania of 1730 to 1740, which might have been as serious a matter as the far better known Tulip mania of 1634–1637, but for the care of a maternal government to nip it in the bud. And then there was a lucky chance of one of the Voorhelms falling ill when his Hyacinths were in bloom, which prevented his rogueing as was his invariable custom, and so gave the doubles their chance—"better be born lucky than rich."

Again, the group had a botanical interest. I am sure some of the eyes that saw it were the eyes of botanically-minded men, and if so, and if they only knew what a good example of sporting was spread out before them, they would necessarily begin to think about the cause of "sporting" and why some flowers are more given to it than others. Whether they have advanced far on the road of knowledge I cannot say. I hope so, for surely the most unbotanical mind must sometimes wonder why Chrysanthemums, Tulips, and Hyacinths should be such sporters. King of the Blues is a Hyacinth very much given to sporting. I counted six of its sports, viz., Purple King, Ivanhoe, Indigo King, Queen of the Lilacs, King of the Violets, and Codro (a double). If Codro lives, and it ever becomes one of the common-places of commerce, it will recall one of the Dutch disappointments of the war. Money was to be made by co-operation in growing and drying vegetables for the use of the belligerents. The scheme could not fail. A name was required for the new sport. What better than a compound word to signalise, as they thought, the flood tide of prosperity? Something went wrong. The scheme never flourished, but the word remains, Codro. "Co" are the first two letters of co-operative and "dro" are the first three of *drogen*, which means dried. Most of these sports are examples of the old proverb, that you cannot make a silk purse out of a sow's ear. Hence the green bells at the top of King of the Blues spike are generally in evidence in its sports. It is a pity that it is so. This characteristic of the parent is one that might well be omitted in the offspring.

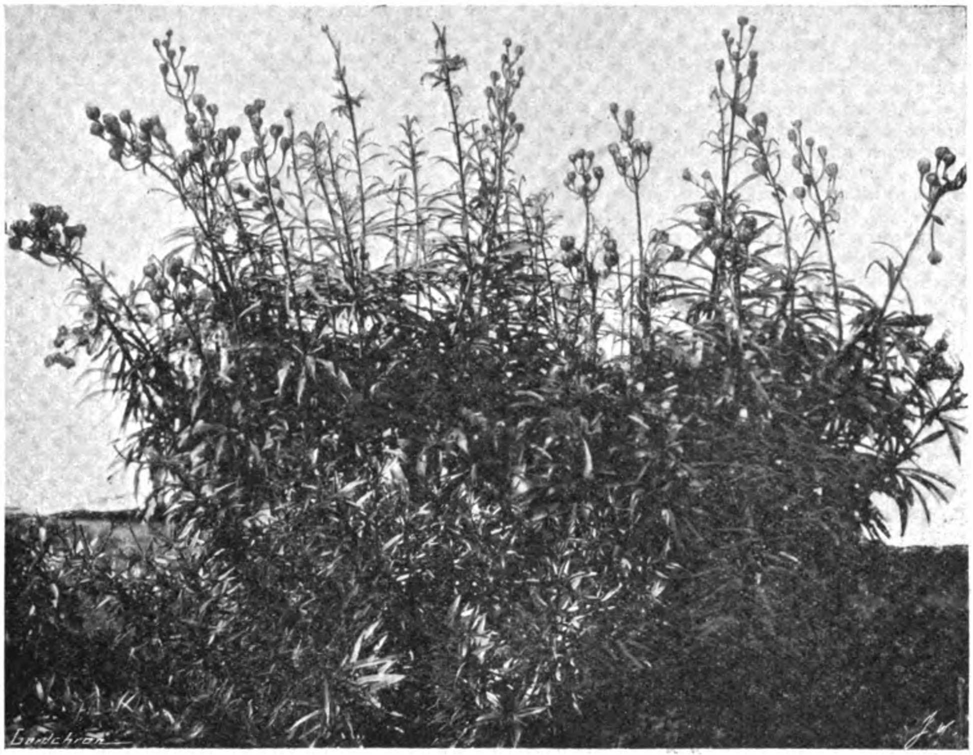

FIG. 113.—LILIUM HANSONII AT THE CENTRAL EXPERIMENTAL FARM, OTTAWA SHOWING SEED PODS (see p. 270.)

One of the most graceful of all Hyacinths is Grand Maitre. The long, rather sparsely clothed, graceful spike is a model of what a Hyacinth should be, and if just the right amount of shading can be given as the flowers are developing we get a shade of blue which is difficult to define but which always takes the eye. There were at least three sports of Grand Maitre, viz., Graf Zeppelin, General de Wet, and Pride of Holland. General de Wet is the pretty pink which may always be known by the way its segments curl quite after the manner of a Martagon Lily. Pride of Holland is its counterpart in a delightful shade of pale mauve, which invariably caught my eye whenever I came across it. I do not think it is in commerce yet, but if it is by all means get it. Graf Zeppelin is only an under-glass variety. The combination of pink and pale mauve of its bells seems to be in unstable equilibrium and the colours are liable to part company in the open with anything but a pleasing effect.

I was rather startled when one of our British members of the jury at Heemstede propounded the question Which variety of Hyacinth has most scent? Somehow I have never thought about it. I know the old Mother o' Pearl is the most fragrant Sweet Pea, and that Rose Celeste takes a lot of beating among Roses, but which Hyacinth? My companion suggested Menelik. Forthwith we all tresspassed on the grass and buried our noses in its basket at the same time sampling some of the other basket-fulls near. Every one of us said "Menelik," for notwithstanding the cold, it had scent. Among the very dark varieties, Menelik is my favourite. It never seems to fail one and is graceful. Which of the mauve shades do I like best? I hardly know. I am not sure if I like any. There were several on view in the big Overveen collection, and after much comparing I finally settled on Queen of the Lilacs, with King of the Violets as the runner-up. Alas, on my return home I could find no Queen of the Lilacs in any of my catalogues. It cannot be in commerce.

My final paragraph is just a record of five very beautiful varieties for pot culture which are all more or less new comers, and which are probably not much known. (1), Ball of Gold, which undoubtedly was the deepest toned yellow in the collection; (2), Hofgartner Kunert, a good solid pink with a paler eye; (3), Daylight, which reminded me of Orange Boven as I saw the baskets at Heemstede, but which I fancy will develop a pinker tone with age; (4) Louis Pasteur, which has a large truss of rich deep blue with here and there a lighter shade on the petals which takes away any heavy look which the spike might otherwise have—it was one of the group of novelties staged by Messrs. Van der Vlugh and Sons; (5), Chestnut-flower, not a novelty, but judging by what is said about it when visitors see it in bloom here in Whitewell, it ought to be more grown. It is one of the latest varieties, and any one who knows the flower of our Horse Chestnut will say it has been given a most appropriate name. I only saw one basket of it in the big display; it may be rather scarce, or possibly March 13 was a little too early for it. *Joseph Jacob.*

HARDY FLOWER BORDER.

THALICTRUM ANEMONOIDES.

Under the name of Anemone thalictroides Linnaeus described a North American plant in the *Species Plantarum* more fully than he was accustomed to do, but this was changed to Thalictrum anemonoides by Michaux. I noticed this plant under the name of Coptis at Wisley, where it succeeds admirably in the sandy, peaty soil amongst trees and bushes where the shade seems to suit it. It is an elegant, slender growing plant about a foot high, and commences flowering late in March. Though it was introduced to this country in 1768, and a double form recorded for the same year, yet it is quite an uncommon garden plant. Possibly few people have the right soil or situation for it and fail to grow it. In any case there seems to be a very small demand for it, for I can find it in only one out of about a dozen catalogues of herbaceous plants.

The plant has a tuberous rootstock, from which radical leaves and a stem bearing four leafy bracts arise. Most Anemones, if not all, have three leafy bracts. In the species under notice, one to five pedicels arise, each bearing a single flower about the size of a shilling, and pure white. A broad patch of such a plant is quite effective at this early period of the year when early flowers are far from numerous. The radical leaves are twice ternately divided into somewhat heart-shaped, angular blades, which rest just under the snowy flowers; the latter consisting of petaloid sepals only, though Linnaeus called them petals. *J. F.*

TRITONIA (SYN. MONTBRETIA) ROSEA

Long comparatively neglected, Tritonia, or Montbretia rosea, is again appearing more frequently in gardens. It is a plant of pleasing habit with delicately-coloured flowers that are valuable for cutting for home decoration. The species has been long enough in cultivation to be better known, seeing that it was introduced from the Cape to this country by way of Holland so far back as 1793. It is very distinct from the noble Montbretias which have been raised and distributed within comparatively recent years, being more slender and of a more charming shade of light rose. It grows about eighteen inches to two feet in height, and a group of a dozen or so plants is very pleasing in the border in autumn. Still more attractive is a reserve or nursery bed with a hundred or two spikes open at once.

Tritonia rosea has appeared under various names, but is now generally catalogued as Montbretia rosea, and is offered at a moderate price. It is well figured in the *Botanical Magazine*, t. 618, and an illustration and description appeared in *The Ladies' Flower Garden of Ornamental Plants*, to which I am indebted for a few particulars regarding this plant, which I have known and grown for a good many years. In view of my own experience and that of a good many others who have cultivated it, I was rather surprised to read in Mrs. Loudon's work that "it appears delicate, and it requires to be kept in a pot and carefully nursed." In most places the plant seems to be hardy, and will even withstand the winter in the open, even in situations where the newer Montbretias of the type of King Edward, Star of the East, and similar fine varieties require winter protection. This is at least the case in light, well-drained soils.

The coloured plate in Mrs. Loudon's book does not do justice to the colouring of the flower, which is much better than in the reproduction.

This Tritonia has several synonyms, including Gladiolus roseus, *Jacq.*; G. striatus, *Banks*; Tritonia capensis, *Ker*; Houttuynia capensis, *Hout.* I may add that planting is best done in spring where this bulb is grown in the open. *S. Arnott.*

MARKET FRUIT GARDEN.

March could not have been a better month from a fruit-grower's point of view. Cold winds kept back the fruit blossom, which threatened to be dangerously early, but will now apparently be open at about the normal time, or even a trifle late. Black Diamond, which is the earliest of my Plums to bloom, had opened only about a quarter of its blooms by the end of the month, although one or two burst so early as the 17th. For ground cultivation the month was ideal. The first horse cultivation of all the plantations was done with unexpected ease, owing, no doubt, to the loosening of the surface soil by frost. As the rainfall of March amounted to only 0·87 inch, there was nothing to interrupt the work—in fact the showers were helpful to hoeing. Conditions were excellent also for spraying, as there were periods with little or no wind. Altogether a great deal of work was accomplished during the month, and prospects, at the time of writing, are all that could be desired.

When to Spray.

All the Plums were sprayed with nicotine and soft soap in March to kill the stem-mothers of the leaf-curling aphis. I am now waiting for the Apples to become sufficiently advanced to receive the same treatment, except where they were sprayed with a tar oil winter wash. As I am anxious to spray also with Bordeaux mixture before blooming, instead of leaving it till afterwards, the aphis washing will have to be done at a rather earlier stage than usual. The unfortunate thing about aphides, Apple-suckers, and caterpillars is that they hatch out over a considerable period. Previously I have aimed at spraying when the bloom was in the pink bud stage, doing the work twice so as to catch most of the varieties at the right time. This no doubt deals with the bulk of the insects, practically all of which have hatched out by then. I do not think, however, that there will be anything lost by rather earlier spraying, as this will prevent a great deal of damage which is usually done to the unopened buds. The rosy Apple aphis, which is generally the worst of the pests, certainly hatches early, and will probably be destroyed before it has had time to multiply to any extent. I know some good growers who hold that early spraying pays them best.

I want to spray with Bordeaux mixture when the bloom is in the "final pink" stage. It is unfortunate that one cannot efficiently deal with aphides at the same time. Some growers do add nicotine to their Bordeaux mixture, but personally I have found nicotine almost useless without soap; and soap, of course, is quite impossible with the fungicide. There is, however, no reason why arsenate of lead should not be mixed with the Bordeaux mixture, and this will be done if caterpillars are at all numerous.

Some Spraying Materials.

The Bordeaux mixture I use is made according to the Woburn formula, and is bought ready prepared in the form of a paste. I believe this to be the safest formula to use. Last year a calcium caseinate spreader was added, but this will not be used this season as it occurs to me that it must be undesirable to add any limy material to this particular kind of Bordeaux mixture, and the makers agree with me.

I have mentioned nicotine, but I am using chiefly a proprietary Derris extract instead. I have found this to be quite as good as nicotine, and it is now decidedly cheaper. Nicotine at 14s. per lb. is almost out of reach of a commercial grower.

Flowering Problems.

I have never been able to believe in the importance of ripe wood for carrying bloom and fruit. The ripening of the wood in autumn is a matter much talked about. I believe it ripens sufficiently in any season. Supposing the tips of the shoots do not get quite ripe, that is not likely to have much influence on the crop of the following year, considering that most hardy fruits bear chiefly on spurs on the older wood. Certainly there could not have been a worse season for ripening wood than that of last year. Yet it is already clear that pretty well anything in the shape of a fruit tree is going to bloom profusely. Anyone could have predicted this ten or twelve months ago with little fear of being wrong. The trees are blooming freely this year because they bloomed very little last year. The alternate-year bearing habit is the determining factor. There are puzzling exceptions, I must admit. For instance, I have some old Czar Plums which are very regular in alternate-year bearing. They had a full crop last year, and yet, for some reason or other, they are going to bloom profusely again this season. Whether the bloom will set remains to be seen. But what has thrown them out of their biennial habit so far as blooming is concerned? It always seems as if it must be a problem of nutrition; but there is nothing in the manuring of these Czars to account for their behaviour. They had a dressing of shoddy in the winter of 1922 and complete artificials in the early autumn of 1923. Perhaps this was enough to enable them to form fruit buds in 1924 in spite of the burden of a heavy crop. Frost, of course, prevents regular bearing; but what can prevent regular blooming if not want of nourishment? I have been trying for several years to secure annual blooming by the use of manures, but with only slight indications of success. Unfortunately plans had to be upset last year for reasons of economy, but I hope to resume trials of manuring during the growing season if there is a full crop this year.

Geese in Orchards.

Having failed to obtain any information about running geese under fruit trees to keep down grass and weeds, I have purchased three of these interesting birds and enclosed them on about an acre of half-standard Apples. This odd piece of land is awkward to cultivate, and it practically grassed itself down last year. As the trees would probably be better in grass, I am going to see whether the geese will relieve me of any further trouble by keeping the grass under control. People tell me all sorts of things about them. Some say that they graze as much as a cow, and should do the work well. Others say that they will eat sweet grasses, but not such stuff as Creeping Bent, which is my chief weed. It is too early to say what the result will be, but certainly the geese do a lot of grazing. They seem to be nearly always at it; but whether three of them will be enough for an acre remains to be seen. They are certainly less trouble than any other kind of poultry, requiring only a handful of grain a day in addition to the grass, and nothing but a rough, open shed (which they never use) in the way of housing.

Marketing Problems.

The Ministry of Agriculture has given a great deal of attention to marketing questions recently; and now comes news that a marketing officer has been appointed to conduct an investigation into the machinery of fruit distribution in England and Wales. This is all to the good, as it may be assumed that this officer will, when in possession of all the facts, be in a position to recommend reforms in our wholesale markets and methods of marketing which may help to secure for growers a rather larger share of the prices paid by consumers for fruit and vegetables. The appointment may, no doubt, be taken as a sign that the Ministry does not mean to allow the excellent work of the Linlithgow Committee to be entirely wasted.

With regard to the advice on marketing which is being rather freely given, it is to be doubted whether growers need advice so much as they need assistance towards the production of fruit that is worth good marketing. The boxing of Apples is specially urged; but it may be said that, whereas almost any grower can learn to pack Apples in boxes in a few hours, very few are at present growing a fair proportion of fruit of good enough quality for boxing. The greatest enemy to the boxing movement in this country is Apple scab; and one of the greatest boons that the Ministry could confer on the industry would be the institution of exhaustive investigation with a view to finding reliable preventives of this disease. So far as I am aware, the only experiments on scab prevention being carried out at present are those in progress at East Malling Research Station; and those are designed to test the effects of various standard fungicides on the trees rather than to discover any new remedy or method of attack. In our moist climate it is much more difficult to grow Apples good enough to box than it is in the arid regions overseas, where Apples are grown, with the help of irrigation, for export to this country. With a dry climate and abundant sunshine, and with water to turn on just when required, the scab problem can hardly be said to exist at all. In this country, in a wet year like 1924, we are almost powerless against scab with our present weapons.

At long last we have been provided (by the Dutch!) with a winter wash which renders us practically independent of insect pests. We now want something equally effective as a preventive against scab and other fungous diseases. *Market Grower.*

PUBLIC PARKS AND GARDENS.

The Town Council of Morecambe has applied to the Ministry of Health for sanction to borrow £25,000 for the laying out and improvement of the Regent Road recreation ground.

After receiving a deputation from the Agricultural Society, the Parks Committee of the City of Edinburgh did not adopt the report of the sub-committee which recommended refusal of the use of the Meadows for the Society's show, and resolved to recommend that the request be granted. At their monthly meeting on April 2 it was agreed by the Town Council to grant the use of the park for the show. It was explained to the Parks Committee that the park would only be required for two days.

At the same meeting of the Town Council a proposal that the charges for the use of the bowling greens be raised from threepence to threepence-halfpenny per hour for singles and pairs and from twopence-halfpenny to threepence per player for a whole rink was considered. It was stated that the loss on the bowling greens during the past year had amounted to £990, and that there would be a stated deficit even if the increased charges were adopted. After a full discussion the proposal of the Parks Committee to increase the charges as above was defeated and it was decided that a flat rate of threepence per player be charged.

At their meeting on April 2 the Edinburgh Town Council agreed to give leave of absence to Mr. John Jeffrey, the Superintendent of Parks, to act as a member of the international jury at the Dutch International Spring Show from April 10 to 13. The Council also agreed to pay Mr. Jeffrey's expenses.

APPLE LEAF SCORCH.

May I be permitted to make some observations through the medium of your paper on an article on "Apple Leaf scorch" which appeared in *The Gardeners' Chronicle*, March 28, 1925, under the signature of *H. E., Durham.*

The object of the article is apparently to show how the results of investigations on Leaf scorch carried out at Long Ashton actually appear to disprove our conclusions regarding a deficiency of potash in the food of the plant being the cause of, or associated with, Leaf scorch.

As the problem of Leaf scorch is very complex, and as any general discussion of the problem would accordingly be very lengthy, I am confining my remarks in this communication to the points raised in the article with reference to "the role of potash."

Your correspondent arrives at his conclusions from considerations, etc., taken from our *Annual Reports* of 1921, 1922, and supports his conclusions by quoting the work of Dr. Bernard Dyer on "Available Mineral Plant Food in Soils." (*Journ. Chem. Soc.*, LXV., 1894, p. 162).

It is obvious from the selected statements which are given that your correspondent has failed to appreciate the significance of the whole of the facts presented in the *Reports*, and we should, therefore, like to bring to his notice certain points which make clear the rôle of potash as an antidote against Leaf scorch.

Considering first our observations on Leaf scorch in the pot experiments recorded in the *Annual Reports*, 1921, 1922, Leaf scorch was entirely absent from Series H (rain water only) in both seasons; entirely absent from Series C (nitrogen omitted) in 1921, although these trees scorched slightly in 1922 when bearing a heavy crop (in this connection, see *Journ. of Pomology*, January, 1925, article by Hatton and Grub on "Apple Leaf scorch"); scorch was fairly severe in both years in Series A (complete nutrient); in Series D (potash omitted) scorch was *always* more severe than in any other series and was *always* in evidence at an earlier date than in any other series; in Series G (magnesium omitted), towards the end of 1921, scorch was more marked than in Series A, *but on all other occasions was similar in amount to Series A.*

It will be noted from these observations that the only series in which Leaf scorch was not developed to any extent, nitrogen was absent from the solutions given—Series C and H—and that Leaf scorch was *consistently* the most severe on plants in Series D in which potash was omitted.

From these results it would appear that the ratio nitrogen/potash in the nutrient solution is of importance in considering the question of the production of Leaf scorch in these experiments, whilst the possible importance of magnesium, though in a minor rôle to potash, should not be overlooked.

Further experiments carried out during 1923 (*Annual Report*, 1923, pages 43–47)—of which experiments your correspondent makes no mention—showed that the ratio nitrogen/potash in the complete nutrient solution was the factor which determined the development or otherwise of Leaf scorch in similar pot experiments on Apple trees, using the same variety—Cox's Orange Pippin—as in the 1921 to 1922 experiments.

In these experiments no Leaf scorch was developed on trees receiving a complete nutrient solution in which the ratio nitrogen/potash was decreased below that of the Solution A used in the previous experiments by adding extra potash to Solution A, whereas the trees receiving Solution A developed scorch as in previous years. Moreover, in our nutritional experiments with Gooseberries, Black Currants, Raspberries, and Strawberries, the only treatment which has produced Leaf scorch has been "potash omitted" treatment.

In these later experiments no further evidence has been obtained to show that magnesium plays any part in preventing scorch.

In passing, it should be noted that in these experiments in which Leaf scorch has been entirely eliminated by high potash feeding carbonates and humic matters have been absent.

These results leave no doubt in the mind of the present writer as to the importance of the rôle of potash in controlling Leaf scorch in cases where the condition results from unbalanced nitrogenous feeding. Our experience in the field has shown that such cases are common in practice—especially on the lighter soils—and in such cases where potash treatment has been given by us, it has generally resulted in a great reduction of the amount of Leaf scorch originally present.

The argument which your correspondent uses in the paragraph commencing, "But the possible rôle of potash is still further ousted . . ." appears to us to be quite unsound. He states near the end of the paragraph, "In passing, it may be noticed that we do not know what may be the requisite available potash for healthy Apple growth . . . 0·005 per cent"; and yet, in the same paragraph, he states, "the possible rôle of potash is still further ousted . . . 0·0058 and 0·0060. It will be observed that this limit is well exceeded in the subsoil . . . surface soil." (Note that Dr. Dyer's results, to which reference is made, referred to Barley crops grown at Rothamsted).

The essence of this argument by which potash is ousted, is that although the amount of available potash required by the Apple is not known, yet the amounts found in a certain soil on which Apple trees scorched are about this unknown amount.

Since, in our experiments, we have shown that the development of Leaf scorch can be determined under the simplest possible conditions in sand culture by the ratio of nitrogen/potash in the plant food, one can hardly conceive how a definite limit of available potash in soils above which Leaf scorch will not occur can be fixed.

In this connection, it will probably be of interest to your correspondent to learn that in the cases mentioned in our *Annual Report* for 1921, page 92, Centres A. and F., where the amounts of the available potash in the surface soils were 0·181% and 0·0133% respectively—the highest of the cases considered—Leaf scorch has practically disappeared since dressings of potash manures have been applied.

Since publishing our report on Leaf scorch in 1921, we have carried on our physiological investigations with a view of discovering the manner in which potash deficiency within the tree renders the latter susceptible to scorch. The results indicate that potash plays an important part in determining the water relations existing within the tree, and that it is possibly of special importance in preventing excessive loss of water from the leaves under conditions of bright sunlight. The observations made in these experiments would appear to be of special significance to the problem as indicating yet another reason why potash manures should exercise a beneficial action in cases of Leaf scorch in Apples.

In conclusion, I should like to state that potash manuring will be effective in reducing the amount of Leaf scorch in plantations where the primary cause of the trouble is the existence of the high nitrogen/potash ratio in the tree food. As, however, Leaf scorch in the field can result from causes other than the above, it is not to be expected that potash dressings will be effective in all cases. *T. Wallace, Long Ashton Research Station.*

HOME CORRESPONDENCE.

Apple-Leaf Scorch.—Looking at this prevalent complaint of our Apple trees solely from the point of view of the grower, I must confess an inability to see how its occurrence and continuance can be attributed finally to deficiency of potash in the soil. During comparatively recent years Apple-leaf scorch has spread with extraordinary rapidity in various parts of the country with their wide differences of climate and soil. No one would be so bold as to assert that all these soils, ranging from the lightest sands to the heaviest clays, have lost, entirely or in part, their potash content at the same time, and that the shortage displays itself only in one plant—the Apple. Again, one sees curious examples of the visitation which in their turn make it still more difficult to accept the theory that the trouble is directly due to the lack of available potash. In a garden within a quarter-of-a-mile of where I write there is a broad path on each side of which is a row of twenty bush Apples, planted as nearly as one can judge ten or eleven years ago. The management has been reasonably good, the crops satisfactory, and the trees are clean and healthy, with one exception, a shapely specimen towards the north end on the west side, which suffers badly from leaf-scorch. Are we to assume that the potash has suddenly vanished or become "locked up" in the neighbourhood of the roots of this tree alone? In an orchard of young standard Apples, to which the before-mentioned path leads, there was not a visible indication of the presence of leaf-scorch last season. The trees have been neglected in pruning, cleaning, and feeding since they were planted in 1914, and they are stunted because the grass has grown right to their stems from the time of planting to the autumn of 1923, when a ring of open soil was formed around each. Might we not expect leaf-scorch to develop in them if it is due to lack of potash? While availability of potash and defective root action may be contributary causes of the increasing trouble we must, I think, look elsewhere for the primary cause, notwithstanding the extremely interesting deductions which have been developed from the Long Ashton experiments. In regard to the interpretations of the reports of these experiments made respectively by Dr. Durham and *Market Grower*, I must confess to having come to precisely the same conclusions as the latter. *W. T.*

Potato Breeding.—I should be much obliged if Mr. McIntosh would furnish the names of the varieties of Potatos highly resistant to late Blight disease and the one variety immune to common Scab, to which he refers on p. 256. To the ordinary grower this information will be of very great value. Varieties immune to wart disease are noted in seedsmen's catalogues, but I have never noticed any sorts specially recommended as being resistant to late blight or scab. *E. G. Evans, Highfields, Halberton, Tiverton.*

Bees and Apple Fertilisation.—The discussion of this subject, which has proceeded in *The Gardeners' Chronicle* during the several months which have elapsed since my original letter appeared, shows a wide divergence of views; nevertheless, there seems to be a consensus of opinion that bees are valuable assistants of fruit growers. This was my contention at the outset, and statements made by several experienced writers have gone to confirm it. Mr. F. J. Chittenden made reference to the subject during the course of his valuable address at Ipswich (reported on page 242). Referring in laudatory terms to the value of hive bees in fruit fertilisation, he alluded to their comparative scarcity in some districts, and paid tribute to the excellent work in the same direction done by wild bees, especially mentioning the energetic humble or bumble bees. Thanks to the support given in these pages I shall continue to feel justified in recommending the provision of stock of bees in fruit plantations. *W. T.*

SOCIETIES.

ROYAL HORTICULTURAL.

April 15 and 16.—The Society's Daffodil Show was held at Vincent Square on these dates and was a very successful function, considering the season and the difficulty of getting flowers to London immediately after the Easter holidays. The Society provides the accommodation for the show and also the medals awarded. The prize money is contributed by Daffodil lovers, and Messrs. E. A. Bowles, P. R. Barr and C. H. Curtis are responsible for its provision and distribution.

The Narcissus and Tulip Committee met on this occasion, so soon as judging was finished; they considered the merits of eighteen new varieties and also made recommendations concerning the next Daffodil Show.

Narcissus and Tulip Committee.

Present: Mr. E. A. Bowles (in the chair), Miss Willmott, and Messrs. P. D. Williams, W. F. M. Copeland, W. Poupart, G. W. Leak, Geo. Churcher, J. W. Jones, Henry Backhouse, Charles H. Curtis, C. C. Titchmarsh, Herbert Smith, C. W. Needham, F. H. Chapman, A. W. Goodwin, R. Rollo Meyer, H. G. Hawker, F. Barchard, Geo. Monro, W. B. Cranfield, J. W. Pearson, Alfred W. White and Robert W. Ascroft (Secretary).

Awards of Merit.

Narcissus Lady Diana Manners.—This promises to be a useful market variety and for this and for garden purposes it gained the award. It is almost of Poeticus type, but has very broad, thick, white perianth segments that reflex a trifle. The crown is rich orange-scarlet. Shown by Messrs. J. T. White and Sons, Spalding.

Narcissus Yellow Jacket.—A pretty variety and one which is supposedly of gracilis and Poeticus parentage, but this parentage would appear to be "not proven" and many growers consider it to be a Jonquilla hybrid, and, indeed it was entered as such despite the parentage suggested. The flowers are small, starry, with incurving margins to the yellow, orange-tinted perianths and segments; the cup is small, neat and yellow. Shown by Mr. C. A. Jardine, Chiswick.

Narcissus Dawson City.—A grand trumpet variety of soft golden yellow colouring. It has unusually broad perianth segments and a long, stiff trumpet with frilled but not recurved rim. This bold, handsome variety was raised by Messrs. Van Tubergen and was a notable feature among new Daffodils shown at the International exhibition at Haarlem. It gained the award as a show variety. Shown by Messrs. R. H. Bath.

Narcissus Treasure.—One of the neatest and most shapely of Trumpet Daffodils, of rich, golden-yellow colouring. The broad perianth segments overlap to form a rounded setting for the comparatively short, tubed trumpet. The latter is wide, and has a beautifully-recurved and frilled rim. A fine show flower. Shown by Messrs. R. H. Bath.

Narcissus Beersheba.—An exquisite and chaste Trumpet Daffodil of large size. The perianth segments are wide but bluntly pointed, and the very long trumpet has a lightly-frilled rim. The flower is wholly white, but not so solidly white as in the case of White Knight and similar sorts. Raised by Rev. G. H. Engleheart. Exhibited as a show flower by Mr. J. Lionel Richardson, Waterford.

Narcissus Jubilant.—A splendid Incomparabilis variety of fine form and size. The blooms have a clean-cut appearance that renders them very distinct. The colour is bright sulphur-yellow. Shown by Mr. P. D. Williams.

Narcissus Kingcroft.—A Poetaz variety of outstanding merit. The flowers are large, substantial and finely formed. They are white with an orange crown. Each stout stem carried two fine and fragrant blooms. This should prove a capital market variety and possibly a good subject for pot culture. Raised and shown by Mr. P. D. Williams, St. Keverne.

Preliminary Certificate.

Narcissus Fanny Currey.—A delightful flower of giant Leedsii type, but the semi-transparent blooms are white, with a pink frilled rim to the wide-mouthed trumpet. Shown by Mr. J. Lionel Richardson.

Narcissus Hades.—A beautiful Barrii variety with creamy yellow perianth, and a broad, rounded cup of intense orange-scarlet. Shown by Mr. J. Lionel Richardson.

Open Competitive Classes.

The best twelve vases of large Trumpet Daffodils was shown by the Donard Nursery Co., who included Grenadier, Clarion, Gorgeous (yellows), White Emperor, and Moira O'Neill. Mr. F. H. Chapman and Mr. J. L, Richardson were placed equal second. Mr. Richardson was first with twelve Incomparabilis varieties, of which his very best were The President, Orange Glow, Brightness, and Leontes; second, the Donard Nursery Co.

In the class for twelve Barrii varieties Mr. J. L. Richardson was alone, and was awarded the first prize for a fine collection of such sorts as Firetail, Harpagon, Queen of Hearts, and Crimson Braid. Similarly the Donard Nursery Co. were awarded first prize in the class for twelve large Leedsii varieties. They showed mostly seedlings under numbers.

There were no exhibits of small Leedsii or Poeticus varieties in the above section.

The following classes required three stems each of six varieties. Mr. F. H. Chapman, showing three seedlings of considerable merit with Formidable, Ossa, and Yukon, was first with yellow Trumpets, and Mr. Richardson was second. Mr. Richardson was first with (a) white Trumpets, (b) bicolor Trumpets, (c) yellow Incomparabilis, (d) yellow Barrii, (e) white Barrii, and (f) large Leedsii. His outstanding sorts were (a) Atalanta, White Dame, (b) Mr. W. Christie Miller, (c) Brightling, Orange Glow, Leontes, (d) The President, Pedestal, Seville, (e) Queen of Hearts, Lady Moore, Ruby, and (f) Irish Pearl, Tenedos, and Kingdom. Mr. Chapman was second with white Trumpets and with large Leedsii, and Mr. W. A. Watts was second with bicolor Incomparabilis. Small Leedsii were not represented, but with charming seedlings Mr. W. F. M. Copeland was first with Triandrus, with Mr. Watts second, and also first with Doubles, of which he showed Oranges and Lemons, Irene Copeland, and Meringues.

Competition was much better in the classes for new varieties, where the best twelve sorts raised by the exhibitor were shown by Mr. P. D. Williams. This magnificent collection included Kilter, a vivid Barrii, Theodore, a delightful Barrii bloom with a primrose-coloured perianth and glowing corona, and St. Agnes, a giant Leedsii with evenly crested margin to the corona. Dr. N. T. Lomex, who was second in this strong class, showed John Peel, a Barrii bloom of uncommon pink colouring on the perianth and a reddish-orange corona. Beauty of Radnor and Rewa, which has a pale orange corona, were also admirable.

The best six varieties raised by the exhibitor were shown by the Rev. A. R. Meyer, Walton Rectory, Hertford. They were mostly seedlings of great merit. The Rev. G. T. Pearce, Creed Rectory, Grampound, Cornwall, who was second, also had meritorious blooms.

Showing unnamed seedlings the Donard Nursery Co. were first in the class for three varieties raised by the exhibitor, and Mr. **Copeland** was second.

The class for twelve varieties not yet in commerce was well filled with splendid flowers. The first prize was won by Mr. P. D. **Williams** with a magnificent collection, which included Miriam, a sulphur-yellow Trumpet. Kilter, Nelly, and Kenegie, three Barrii varieties with vivid coronas. Mr. **Richardson**, who was second, staged Golden Ingot, Yellow Trumpet, and Sunset Glow, a beautiful Barrii variety.

Seedlings were almost exclusively shown in the classes for six and for three varieties not yet in commerce, and here the first prize in the former was won by the Rev. H. R. **Meyer**, and Mr. **Copeland** was second in the smaller class. Major **Churcher** won the first prize in the "Novices" class with three very good varieties.

The market classes for boxes of Daffodils as packed for market did not induce any competition; the only boxes being sent by Messrs. J. E. **White and Sons**.

There were many entries in the open classes for single blooms of the various divisions. Mr. P. D. **Williams** was first in both Incomparabilis classes, showing Jubilant and Galopin; with Kilter in the yellow Barrii class; and with Nellie in the small Leedsii. Mr. W. **Welshman**, who showed Highlands, was first for yellow Trumpets. Mr. J. L. **Richardson**, who showed Beersheba and a seedling, won first prizes for white and for bicolor Trumpets, and with Ringdove won the first prize for Poeticus varieties. Mr. **Watts** was first with Trumpet-shaped Triandrus, and Mr. **Copeland** was similarly successful with the cup-shaped variety. Sollert, shown by the **Donard Nursery Co.**, was the best Jonquilla, and Xerxes, shown by Mr. W. A. **Watts**, was the best Tazetta bloom.

Competition was poor in the Amateur Classes, where Miss K. M. **Hinchcliffe**, Worlington House, Instow, was awarded most of the first prizes. Her collection of twenty-four varieties included very good blooms of Golden King, Elfrida Pearson, Sybil Foster, King Alfred and Golden Rose. Chief amongst her six Trumpets were, Treasure Trove, Juliana and Gwendal; Herrick and Virgil were her best Incomparabilis varieties.

In Section VI the first prize collection was shown by Miss **Violet Warren**, The Quinta, Canterbury, who included Monarch, Incognita and Homespun. Miss **Warren** was also first with small Leedsii blooms. The Rev. G. **Pearce** was first with yellow, white, and bicolor Trumpets, Incomparabilis and large Leedsii varieties. Major **Churcher**, showing excellent blooms of Robin Adair, Festive and Pedestal, was first with bicolor Incomparabilis and with Tazetta varieties.

The bowls of Daffodils were very uninteresting and did not display the decorative value of the flowers so much as might have been expected. The first prize was awarded to Mr. W. F. M. **Copeland**.

NON-COMPETITIVE EXHIBITS.

Over two hundred varieties of the different divisions were admirably staged by Messrs. **Barr and Sons**. To the enthusiast the greatest interest lay in the many splendid seedlings—as yet unnamed—and more especially in the vivid coronas of the Barrii varieties both those with white and with yellow perianths. Probably these are the finest of their type that have been shown. Amongst the many named varieties we especially noted Basilia, a large, yellow Trumpet, with a widely expanded, frilled cup; Fides, a similar but deeper coloured bloom; Fiery Monarch, a large Incomparabilis with a fiery orange cup; Warwick and Nereus, two very large and rich yellow Trumpets; Milk and Honey, a double flower of chaste colouring; St. Olaf, a starry Leedsii and Silver Cycle a lovely bicolor cyclamineus hybrid (Gold Medal).

The Donard Nursery Co. had an extensive collection in which the large Trumpet varieties were prominent. The chief white or sulphur coloured were Comely, Eskimo, white; Silver Fox, Tenedos, Phantasy, Everest and Lady Sackville. The yellows included Gog and Magog and March Wind, while outstanding amongst the Barrii blooms were Sunrise, Dosoris, Croesus and Carnival. Fortune, a large Incomparabilis with a yellow perianth and orange cup and Bernardino, white perianth and citron cup were also of great merit (Gold Medal).

The large Trumpet varieties also commanded considerable attention in the collection arranged by Mr. J. L. **Richardson**. His outstanding yellow varieties included Master Robert, Serjeant Murphy, Loyalist, Michael and Goldbeater. Ivorine, Queen of the North and White Star of the small Leedsii and Firetail and Croesus of the Barrii types were also admirable (Gold Medal).

In addition to seedlings of more than average merit Messrs. R. H. **Bath, Ltd.** staged admirable vases of many named sorts, Bath's Flame, a red-rimmed Barrii of great substance attracted a deal of well deserved attention, Buttermilk and Inglescomb are two excellent doubles. Lord Kitchener, with pale primrose trumpet; The Marquis and Dominion, two splendid large trumpet varieties; White Nile, Golden Goblet, and Early Gold are the names of only a few of their excellent varieties (Gold Medal).

The grouping of such excellent Barrii varieties as Marshlight, Sunrise and Brilliancy by Messrs. J. R. **Pearson and Sons**, admirably illustrated their great decorative value. Other fine sorts which they included are Moira O'Neill, Sanctity, a pendulous white Trumpet; Fairy, yellow Trumpet; Argent and the Pearl, doubles; Bernardino, Thorkel and Potentate (Silver-Gilt Banksian Medal).

The **Welsh Bulb Fields Company** showed a number of promising seedlings and also such named sorts as Brigand, Canute and Lord Roberts, excellent yellow Trumpet varieties; Peggy, an Incomparabilis with a fiery, orange corona, and Brightling, a highly decorative Barrii bloom with a broad, flattened corona of great brilliancy. (Silver-gilt Banksian Medal.)

There were many novelties of considerable merit in the large collection set up by Mr. J. W. **Barr**. These included St. Hilda, a large white Trumpet; St. Hywin, a frilled giant Leedsii; Silver Fleece, a lovely paper-white Triandrus; Alope, a magnificent bloom of deep primrose colour with a richer trumpet; Nyssa, a vivid Barrii; Sarchedom, a splendid Poeticus; Jasper, of rich colouring; and Treserve, a large, yellow Trumpet. (Silver Banksian Medal.)

Frostbound, a sulphur-yellow Trumpet; Killarney, a large Trumpet of pale yellow colouring; Red Lady, Sunrise, and Dragon, Barrii varieties; Phantasy, White Emperor, Mrs. R. Sydenham, and Sulphur Queen, were included in the group of Messrs. **Cartwright and Goodwin** (Silver Banksian Medal).

A small collection of valuable sorts was arranged by Mr. W. P. **Downes**, who included Gloria Mundi, Mystery, pale sulphur corona; Evangeline, a small Leedsii, and Patriot, a paper-white Trumpet, with pale yellow corona (Silver Banksian Medal).

Amongst his good seedlings Mr. W. F. M. **Copeland** showed Irene Copeland, Oranges and Lemons and Ragged Friar, three excellent double varieties, as well as a selection of other types (Silver Banksian Medal).

A small collection, chiefly of useful decorative varieties, was arranged by Mr. **Thornton** (Bronze Banksian Medal).

ROYAL SCOTTISH ARBORICULTURAL.

A meeting of the Royal Scottish Arboricultural Society was held at Edinburgh on the 8th inst., Sir John R. Gladstone, Bart., of Fasque, president of the Society, in the chair. On behalf of the Education and Research Committee, Mr. George Leven reported that a large number of photographs had been obtained from which they proposed to make a selection of slides to illustrate the two popular lectures which had been prepared. The Committee had also under consideration a proposal to organise a series of lectures on forestry subjects to teachers, in connection with which Professor Stewart MacDougall had promised his help. Mr. Robert Allan submitted, on behalf of the Exhibition Committee, a list of competitions in connection with the Society's exhibition at the Highland and Agricultural Society's show at Glasgow, and drew attention to the fact that the prize money had been doubled on this occasion. The secretary, Mr. R. Galloway, S.S.C., submitted on behalf of the Excursion Committee a programme of the excursion which is to be held to the North of Scotland in the last week of June, with headquarters at Inverness. He indicated that the Committee expected to have at their disposal a number of excursion bursaries which would be available for members who found it inconvenient to meet the expense of the whole excursion, and he expressed the hope that members would take advantage of these bursaries. The Committee also had under consideration a proposal that one-day excursions should be organised in different districts, the places mentioned being Balcarres in the third week in May, Benmore during the Highland show week, and Douglas Castle Woods in the autumn. The Council adopted these suggestions and instructed the Committee to make the necessary arrangements.

READING AND DISTRICT GARDENERS.'

The last fortnightly meeting of the spring session was held in the Abbey Hall on the 6th inst. under the presidency of Mr. Frank E. Moring. There was a large attendance of the members.

The feature of the meeting was the large entry for the Narcissi and Polyanthus competitions. There was a grand display of cut flowers, consisting of Narcissi, Violets, Arum Lilies, Wallflowers, Polyanthus, etc., contributed by the following members and to be sent to the Royal Berkshire Hospital at the close of the meeting, viz., Messrs. **Gower, Moulton, Webb, Townsend, Fulker, Janes, Jennings, Cocks, J. Wynn, H. Wynn, Dow, Stransom, Broomfield, Watkins**, and **Howlett**.

In the competition for three vases of Narcissi, three distinct varieties, nine blooms to a vase, there were seven entries; the first prize was awarded to Mr. H. **Broomfield**, Cliffe House Gardens, Mapeldurham; the second to Mr. F. **Townsend**, Hillside Gardens, Reading; and the third to Mr. F. J. **Green**, Aldermaston Court Gardens. In the class for one vase of Narcissi, eighteen blooms, mixed, there were six entries. The first prize was won by Mr. H. G. **Cox**, Hamilton Road, Reading; the second prize by Mr. C. J. **Howlett**, The Mews, Earley; and the third prize by Mr. E. J. **Dore**, Liverpool Road, Reading. In the class for three clumps of Polyanthuses in distinct colours, five exhibits were staged. Mr. C. **Moulton**, Rookwood Gardens, Shinfield Road, won the first prize; Mr. A. E. **Kirby**, Amity Road, Reading, the second prize; and Mr. A. **Watkins**, Woden Lodge, Goring, the third prize. In the non-competitive section a First Class Certificate was awarded to Mr. H. **Wade**, Abbotsfield Gardens, Goring Heath, for a collection of Apples. By the kindness of Mr. Wade's employer (Mr. L. A. Crichton) the Apples were sent to the Royal Berkshire Hospital.

As the lecturer announced for the evening was unable to attend, questions were put by the members and a most interesting and instructive time was spent; the discussion related chiefly to garden pests.

Obituary.

John Roberts.—I have just heard from two of the sons of that eminent gardener, Mr. John Roberts, that their father passed away, on April 5, at the ripe age of eighty years, at Rotherham. I first knew him when he was head gardener at Gunnersbury House, Acton, at the time I was travelling for Messrs. John Peed and Sons. After leaving Gunnersbury I believe he took a fruit farm in Kent, and later was head of the Welbeck Gardens, not many miles from here. Last year I had the pleasure of driving him into Nottinghamshire, when we visited Blyth Hall, Clumber House, Thoresby Park, Rufford Abbey, and Osberton Hall Gardens, and he was as delighted and enthusiastic as ever. His pet hobby was, I believe, the cultivation of Grapes, and others will be able to speak of his great successes with that fruit. But he seldom spoke of these things unless he was drawn out, when he would expatiate with the wisdom of a man who knows what he is talking about. I always found him gentle, courteous, painstaking, and keenly observant, one who would suffer long and be kind, was not puffed up, did not behave unseemly, thought no evil, but revelled in thought and action for the good of his fellow man. He passed away peacefully in his chair, full of years, in the presence of the whole of his family, who mourn the loss of a revered father, pattern and guide. *Albert Upstone, Rotherham.*

Noah Kneller.—The passing of Mr. Noah Kneller, one of my very old friends and keen rivals in the show tents in days gone by, severs another link in the chain of memories of those fine old days, when the firmest of friends were generally the most strenuous of competitors. After a very brief illness, Mr. Kneller passed peacefully away at the Home Farm, Laverstoke, Hants., on Saturday, March 28. He had reached the advanced age of eighty-six years, after what may best be described as a long, happy, and useful life. His wife predeceased him in 1911, as did one of his sons, but three sons and four daughters followed him to his last resting place in Laverstoke Churchyard. Mr. Kneller entered the services of Sir Wyndham Portal, Bart. (then Mr. Portal), so far back as 1861, as a young gardener, at Malshanger Park, and as he showed great skill and ability he was promoted to a position wherein, without losing touch with the gardens in which he took so justifiable a pride, he acted practically as outdoor steward, having control of farm, woods, and gardens. During the forty-four years in which he was associated with his employer he earned not only the confidence of Sir Wyndham Portal, but that gentleman's esteem and friendship, as well as that of Sir Wyndham's family. During this period he planted nearly all the big woods at Malshanger as well as the rows of towering Conifers that are such a fine feature there, and one of his proudest moments was when showing to visitors the specimen Birch, planted by King Edward VII. on the occasion of his late Majesty's visit to Malshanger in the company of the late Duke of Westminster. As a horticultural exhibitor, in which capacity I frequently met him, Mr. Kneller was keenness personified, and, with his cheery nature, was as happy in defeat as in victory; in fact, he was one of the most sporting contestants it was ever my privilege to compete with. Probably his best success was the winning for ten years in succession of the first prize for a collection of Ferns, at Basingstoke, whilst other prominent gains were the award of the Gold Medal at Banbury for Onions; three silver cups and four medals for vegetables; the marble clock, given by the Mayor of Basingstoke, for a collection of stove and greenhouse plants; whilst with fruit, in which he was equally successful, he won many first prizes. Only one of Mr. Kneller's sons followed in his father's footsteps, this being Mr. J. Kneller, who has been at Penrhyn Castle, Bangor, for the past twenty-five years, and succeeded the late Mr. Speed as gardener. Upon the death of Sir Wyndham Portal, and the subsequent sale of Malshanger, Mr. N. Kneller retired, the successor, Sir William Portal, kindly and with great thought, setting apart the home farm-bailiff's house for him to retire in, and this he occupied during the period of his retirement — nearly twenty years. *Edwin Beckett.*

George Prideaux Bound.—It is our painful duty to record the death of Mr. G. P. Bound, which occurred quite suddenly on Tuesday, March 31, at Grimston Park Gardens, Tadcaster. During the afternoon he was pruning Roses, and on coming from the pleasure grounds he fell down on a border in front of the fruit houses, about 4 p.m., and never spoke again; death was due to heart failure caused probably by an attack of influenza. The funeral took place on Saturday, April 4, at the parish church of Kirkby Wharfe, which is in the beautiful grounds of Grimston Park, and was attended by many of his old pupils and horticulturists from the neighbourhood. Mr. G. P. Bound had filled the position of head gardener at Grimston Park for eighteen years, and previously he was gardener at Leighton House, Westbury, Wilts; Kingsweston, Bristol, and Ringwood Hall, Chesterfield. His career started, like that of his brother—Mr. W. P. Bound, of Reigate—in the gardens of Berkeley Castle, Gloucestershire, most of his early training being under that splendid tutor for young gardeners, the late Mr. Richard Shore. He was one of the original members of the North of England Horticultural Society, and was a member of its Floral and Vegetable Committee . For many years he had acted as one of the judges at York Gala. He leaves a widow and four sons to mourn his loss, the third son being gardener at Earlsdale, Pontesfords, Salop, the seat of Col. Caton Jones, C.B.

THE LATE MR. G. P. BOUND.

Alexander Kirk.—By the death of Mr. Alexander Kirk of Alloa, which took place on the 9th inst., horticulture in Scotland has lost one of its prominent representatives. Deceased was a native of Newton-Stewart and during his long career of thirty years as head gardener to Mr. J. Thomson Paton, Alloa, he attained a fine record as an exhibitor, for, in addition to his international reputation as a grower of Grapes, he won over four hundred first awards for flowers, plants and fruits, some of which were secured at international shows at London, Belfast, and Edinburgh. Mr. Kirk was also awarded the Neill prize by the Council of the Royal Caledonian Horticultural Society in 1894. He patented a vine and plant food and latterly established the firm of Kirk and Co., Leith, for the sale of this commodity.

ANSWERS TO CORRESPONDENTS.

GARDENER'S COTTAGE: *R. B.* If a head gardener gives his employer notice, he must, on the expiration of such notice, give up possession of the cottage occupied by him as such gardener whether he has obtained another situation or not. Should he not do so the employer could take ejectment proceedings in the local county court.

INSECTS ON PLANT ROOTS: *Kirkaldy.* The pest is a primitive insect belonging to the group of Collembola. These creatures are wingless, and in many other respects are different from the usual run of insects. The pest only lives in damp, decaying plants, where it may occur in enormous numbers. In other words, it follows and accompanies decay, but is not itself the cause of the decay. The Sunflower roots have been attacked by some fungus during the winter and the insects have followed later. It is neither necessary nor practicable to control the insects. The source of the trouble may be due to the position in which the roots were put. The result suggests either a very wet place or a place at first so dry as to kill the roots, followed by subsequent wet. There is no reason why the trouble should recur if ordinary sound horticultural practice is followed.

PINK MRS. SINKIN FAILING: *G. H.* From the specimens sent we suspect your plants of Mrs. Sinkin Pink have been attacked by some insect pest, possibly slugs.

TOMATOS DAMPING OFF: *H. C. B.* The Tomatos are affected with the soil fungus Phytophthora cryptogea and the disease spreads rapidly from seedling to seedling. The main sources of infection are the soil and water supply, but the infection may also originate from the seed boxes and seed pots, as the organism may be carried over from one season to the next. It is important at the time of seed-sowing to commence with sterilised soil, using either steam or treating it with a solution made by dissolving one gallon of commercial forty per cent. pure formaldehyde in forty-nine gallons of water. The pots and seed boxes should also be similarly treated. In spite of these precautions chance infection sometimes occurs and should the disease appear the plants should be watered with a solution of "Cheshunt Compound." This fungicide is made by mixing two parts by weight powdered copper sulphate with eleven parts of freshly ground ammonium carbonate. The mixture should be stored for twenty-four hours in a tightly corked glass or earthenware jar before use. The solution is prepared by dissolving one ounce of the mixture in two gallons of water. When potting the seedlings water them first with the solution while still in the seed-boxes to ensure that the roots are thoroughly watered, and the solution should again be applied after transferring them to pots. When the plants are placed in their permanent positions in the greenhouse the solution should be applied to each of the holes prepared for receiving the plants. About one pint of the solution will be required. If it is necessary to remove a diseased plant the hole should be watered with a pint of the solution, a healthy specimen replanted, and the soil again watered with the specific.

Communications Received.—A. U.—E. J. T.—J. W.—J. J.—F. J. C.—C. P. & Co.—J. W.—J. J.—E. G. E.—C. R.—C. S.—J. K.—E. J. F., U S.A.—A. S. H.—W. P.—E. L.—Ruts.—T. S.

MARKETS.

COVENT GARDEN, Tuesday, April 14th, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-13 0
—elegans	10 0-12 0
Aralia Sieboldii...	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Azaleas, per doz.	15 0-36 0
Cacti, per tray,	
—12's, 15's ...	5 0- 7 0
Cinerarias, doz.	15 0-24 0
Crotons, per doz.	30 0-45 0
Cyclamen—	
—32's	36 0-48 0
—48's	24 0-30 0

	s. d. s. d.
Cyrtomium ...	10 0-15 0
Erica melanthera, 48's per doz. ...	21 0-30 0
— —60's, per doz.	8 0-10 0
Hyacinths, in boxes—	
—white, pink and blue, per doz. spikes	3 0- 4 0
Marguerites, white, 48's per doz. ...	18 0-30 0
Nephrolepis, in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia ...	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large 60's ...	5 0- 6 0
—small	4 0- 5 0
—72's, per tray of 15's	2 6- 3 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0-24 0
—cuneatum, per doz. bun. ...	12 0-15 0
Asparagus, plumosus, per bun.	
long trails, 6's	2 0- 3 0
med. sprays ...	1 6- 2 6
short „ ...	0 9- 1 3
—Sprengeri, per bun.	
long sprays ...	1 6- 2 0
med. „ ...	1 0- 1 6
short „ ...	0 4- 1 0
Azalea, white, per doz. bun. ...	9 0-10 0
Bouva white, per doz. bun....	12 0-15 0
Camellias, White, per box ...	4 0- 4 6
Carnations, per doz. blooms ...	3 6- 4 6
Croton leaves, var., doz. leaves	0 9- 2 6
Daffodils—	
—Emperor, per doz. bun. ...	5 0- 6 0
—King Alfred, per doz. bun....	6 0- 8 0
—Sir Watkin, per doz. bun. ...	3 0- 5 0
Fern, French, per doz. bun. ...	0 9- 1 3
Freesia, white, per doz. bun.,	2 0- 3 0
Galax, American, green and bronze, per doz. bun. ...	— 3 0
Lilac, Dutch, per spikes	4 0- 8 0
Lilium speciosum rubrum, long, per doz. blooms	4 0- 5 0
—short „ „	3 0- 4 0
Lilium longiflorum long, per doz. ...	7 0- 8 0
Lily-of-the-Valley, per doz. bun. ...	24 0-36 0
Narcissus—	
—ornatus, per doz. bun. ...	3 0- 4 0
Orchids, per doz.	
—Cattleyas ...	24 0-30 0
—Cypripediums...	5 0- 7 0
Primroses, per doz. bun. ...	1 6- 2 0
Prunus triloba (Dutch), per bun.	1 0- 1 6
Richardias (Arums) per doz. ...	8 0- 9 0
Roses, per doz. blooms, Richmond	2 6- 5 0

	s. d. s. d.
Roses, per doz. blooms	
Liberty	3 0- 5 0
—Madame Butterfly	3 0- 5 0
—Mme. Abel Chatenay ...	3 0- 4 0
—Melothy ...	3 0- 4 0
—Molly Sharman Crawford, per doz.	3 6- 4 6
—Niphetos ...	2 6- 3 6
—Ophelia	4 0- 5 0
—Sunburst ...	4 0- 5 0
Ruscus, French, per bun. ...	1 0- 2 0
Smilax, per doz. trails	3 0- 3 6
Spanish Iris, per doz. bun.—	
—Blue	24 0-30 0
—Mauve	24 0-30 0
—White	36 0-42 0
Yellow	36 0-42 0
Sweet Peas, per doz. bun. ...	6 0-10 0
Tulips, per bunch—	
—Bartagon ...	1 6- 3 0
—Clara Butt ...	2 0- 3 0
—Couronne d'Or	2 0- 2 6
—La Reine ...	1 6- 2 0
—Prince of Austria	1 9- 2 0
—Wm. Copland ...	2 0- 3 0
—Farncombe Sanders	2 0- 3 0
—White Swan ...	2 0- 2 6
Violets, per doz. bun.	2 0- 4 0
French Flowers—	
Anemone, dble. pink, per doz....	3 6- 5 0
—De Caen, mixed, per doz. ...	5 0- 7 0
Marguerite, yellow, per pad	6 0- 7 0
Marigolds, per pad	5 0- 6 0
Narcissus—	
—Grand Primo, per doz. bun. ...	3 0- 4 0
Ranunculus, dble. scarlet, doz. bun.	5 0- 7 0
—Carmine, per doz. bun. ...	6 0- 7 0
Star (Allium), per pad, 48's ...	10 0-12 0
Stock, double white, per pad 24 bunches ...	8 0-10 0
—double coloured	8 0-10 0
Violets, Parma, per bun. ...	3 0- 3 6
—single, per pad	6 0- 8 0
Wallflowers, per pad	5 0- 8 0

Remarks.—Although trade was very active during the whole of last week, many subjects did not realise the high prices anticipated. Carnations, Richardias (Arums), and Lilium longiflorum realised about the usual Easter prices, but Roses were sold at moderate prices; these latter flowers are now arriving in excellent condition. White Camellias, Freesias, white and mauve Lilac, Lily-of-the-Valley, Spanish Irises, Sweet Peas, Tulips in variety, and Violets all met with a ready demand and there was no particular shortage of any of these subjects. The improved weather resulted in there being ample supplies of Daffodils, Narcissus ornatus, Wallflowers, and and Primroses, and these subjects were difficult to clear on Saturday, when prices were greatly reduced.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Albermarle ...	45 0-50 0
—Oregon Newtown	14 0-16 0
—Bramley's Seedling	12 0-20 0
—Australasian—	
—Newton Wonder ...	12 0-18 0
—Jonathan ...	18 0-21 0
—Cox's Orange Pippin	30 0-34 0
—King David ...	18 0-20 0
Bananas, singles	16 0-25 0
—doubles	17 0-27 6
—others	17 0-18 0
Grapes—	
—English Hambro, per lb.	6 0- 8 0
Grapes, South African—	
—White Hanepoot	8 0-10 0
—Red Hanepoot	8 0-10 0
—Colmar	14 0-16 0

	s. d. s. d.
Grape Fruit, Cuban	18 0-23 0
—Jamaica ...	18 0-20 0
—Florida, finest	20 0-27 6
—other	18 0-25 0
Lemons, Messina, per box... ...	8 0-12 0
—Murcia	10 6-14 0
—Naples	16 0-20 0
Oranges, Jaffa ...	14 0-16 0
—Spanish—	
—300's	18 0-35 0
—360's	14 0-22 0
—504's	14 0-22 6
—Messina Blood	12 0-20 0
Pears, South African—	
—Beurré Bosc ...	5 0- 7 0
—Beurré Diel ...	4 0- 5 0
—Nelis	4 6- 7 0
—Cornice	8 0-12 0
—L. Bonne ...	4 6- 7 0
Pines	3 6- 5 0.
Strawberries, per lb.	10 0-20 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	1 6- 2 0
—Worthing ...	1 3- 2 0
—Madeira, per box	4 0- 8 0
Beets, per cwt....	5 0- 6 0
Cabbage, per tally	10 0-12 6
Canary Island Tomatos ...	18 0-25 0
Cauliflowers, per doz.	3 0- 4 0
Forced Mint, per doz.	4 0-10 0
Chicory, per lb. ...	— 0 4
Carrots, per bun.	6 0- 8 0
—New	— —
Cucumbers, per doz.	5 0- 6 0
—Flats, 36's, 42's	18 0-22 0
Dutch Onions ...	11 6-12 6
Endive, per doz.	1 3- 3 0
Batavia, per doz.	3 0- 3 6
French Asparagus—	
—Cavaillon ...	4 0- 4 6
—Lauris	3 0- 5 0
Greens, best, per bag	4 0- 6 0
Horseradish, per bundle	2 0- 2 6
Leeks, per doz. bundles... ...	2 6- 3 6
Lettuce, per doz.	1 6- 3 0
—Cos	4 0- 6 0
—Outd[illegible] ...	1 6- 3 0

	s. d. s. d.
Mushrooms, cups	2 0- 3 0
—broilers	1 6- 2 0
Onions, Valencia, per case ...	15 6-17 0
—English, per cwt.	12 6-14 0
Parsnips, per cwt.	4 0- 5 0
Peas, French, per cane	6 0- 8 0
—Guernsey forced per lb.	1 6- 2 0
Potatos, Canary Island—	
—Spring crop ...	14 0-16 0
Potatos, per ton—	
—Dunbar ...	200 0-230 0
—King Edward	190 0-200 0
—White ...	90 0-160 0
—New Guernsey lb.	0 7-0 8
—Jersey	0 8-0 10
Scilly	0 8-0 10
Radishes—	
—Guernsey round	1 6- 2 0
—Guernsey long	1 0- 1 6
—French Breakfast	2 0- 3 0
Rhubarb, Forced, per doz. ...	2 6- 3 0
—"Natural" per doz.	7 0-10 0
Savoys, per tally	12 6-15 0
Seakale, per doz. punnets ...	18 0-24 0
Spinach, per bushel	4 0- 5 0
Sweet Potatos ...	— 2 6
Tomatos, English, per lb.	2 6- 3 0
Turnips, new, per doz. bun. ...	8 0-12 0
Turnip Tops, per bag	4 0 6 0

Remarks.—Business was very good for the Easter trade, and the usual reaction afterwards has not been quite so acute as usual; no doubt the spell of fine weather has been in favour of the fruit trade. Supplies of fruits from South Africa have been considerable. Some of the Pears were out of condition, but generally the fruits have been disposed of at satisfactory prices. Grapes have also sold well, although they are slightly cheaper. Australasian Apples have been a fair market with an easier tendency in prices. Some very fine fruits of Bramley's Seedling and Newton Wonder Apples continue to arrive and sell at a comparatively high figure. A fair demand has been experienced for Oranges, Lemons, etc.; Grape fruits are selling steadily. All forced vegetables, such as Asparagus, Beans, Potatos, and Peas are cheaper. Large quantities of Cucumbers are being marketed, and they are still in good demand. English Tomatos are arriving from the Lea Valley and Worthing districts, also Guernsey. Salads are cheaper. Mushrooms are more plentiful and are quoted at lower figures. Rhubarb, both forced and natural, is in fair demand. Canary Island New Potatos are improving in demand. The old Potato trade is quiet with ample supplies available.

GLASGOW.

Owing to the Easter holidays and the closing of the English markets on Friday, southern growers diverted large quantities of cut flowers to Glasgow at the week-end, and the fine weather having developed local outdoor blooms more rapidly than was expected, the augmented supplies far exceeded the trade demand and prices in consequence suffered a general relapse. Medium quality flowers suffered most, but first-class blooms also shared in the decline. Golden Spur Daffodils, which had averaged 3/- to 4/- per dozen earlier in the week, dropped to 1/6 and 2/-, while Emperor made 3/- to 3/6 against 4/- to 5/6. On the week English Daffodils would probably average 2/- to 2/6 for all varieties, Pheasant Eye, 6/- to 9/- per dozen bunches; Star Narcissii, 6/- to 8/- per cane, and Grand Primo, 2/6 to 3/6 per dozen. Tulips were also cheaper: On Friday William Copland sold at 10d. to 1/- for 6's; Farncombe Sanders, 1/- to 1/3; Pride of Haarlem, 1/-; Gris-de-lin, 6d. to 8d.; Prince of Austria, 9d. to 10d.; Couronne d'or, 10d.; Tea Rose and Murillo, 8d. and 9d.; White Tulips, special, 1/- to 1/3, ordinary, 6d.; and Triumphaator, 1/6. Anemones suffered in transit, and as they arrived in a soft condition buyers only conceded 3d. per bunch. White Lilac realised 7/- to 8/-, and coloured 4/- to 5/-; Richardias, English, 9/- to 12/-, Guernsey, 6/- to 7/-; Lilium longiflorum (Harrisii), 10/-, and Carnations, 2/6 to 4/6. Lily-of-the-Valley was cheaper at 1/- to 1/6; English Violets fetched 8d. to 1/-; Wallflowers, 2/- to 3/- per dozen bunches, and Asparagus, 1/- to 1/3. Up till Thursday Madame Butterfly Roses averaged 7/- to 9/-; Mme. Abel Chatenay, 7/- to 8/-; Mrs. Henry Stevens, 4/-; Richmond, 4/- to 5/6; Sunburst, 6/- to 7/-; but the closing quotations were 1/- to 2/- lower. Buying was brisk at the reduced values.

In the fruit market prices moved irregularly, and business was disappointingly slow. The first Scotch-grown Strawberries arrived on Thursday from Gartmore, and were disposed of at 12/- per lb. Guernsey Tomatos kept firm round 4/- per lb., while Jaffa Oranges, which are nearing the end of the season and were in a dry state, declined to from 10/- to 14/- all counts. Valencia brands were also easier inclined, 360's ranging from 15/- to 18/-; 300, 17/- to 20/-; 400, 26/- to 30/-; 240, 16/- to 20/-; and 200, 15/- to 18/-. Murcia Bloods sold for 22/-. Heavy consignments of Florida Grape Fruit were offered, 54's making 16/-, 64's 18/6, and 70's and 80's 20/-. Porto Rico fruit advanced to 20/- and 23/-, and special qualities 27/-. Apples were in smaller demand, and certain varieties were down. U.S. Baldwins made 35/- to 48/- per barrel, Nova Scotia 26/- to 30/-, Ganos 28/- to 32/-, Albemarle Pippin 40/- to 52/-, Ben Davis 27/- to 32/-, Newtown 15/6 to 18/6 per case, and Winesap 15/- to 17/5. Prices for Cape Fruits continued firm. Pears found a ready sale at the following prices:—Beurre Hardy, 6/- to 6/6 per case; Beurre Diel, 5/-; Beurre Clairgeau, 4/9 to 5/6; Louise Bonne of Jersey, 5/- to 6/-; Beurré Bosc, Josephine de Malines, 5/6 to 6/-; and Winter Nelis, 6/- to 7/-. Peaches—Elberta, 6/- to 7/6; Gladstone, 5/- to 7/-; Freestone, 8/6 to 10/-. Grapes—White Hanepoot, 10/6 to 12/6; red, 12/- to 14/-; and Hermitage, 10/- to 12/6. Prices for Lemons were steady, Palermo made 8/6 to 12/-, Murcia 14/6 to 18/-, Naples 16/- to 18/-, all 300's. Cranberries sold at 20/- per box.

New vegetables are becoming more plentiful with the advance of the season, but the return to the producer was well maintained and, in some cases, increased. Madeira Beans advanced 2/- at from 7/- to 8/6, and Guernsey was 9d. up at 2/6 to 2/9. Ordinary quality Rhubarb was 4/- per cwt. dearer at 38/-, while Polecourt-grown Rhubarb advanced 6/- to 48/-. Cauliflowers averaged 6/- per dozen; Cucumbers, 8/- to 10/-; French Asparagus, 4/2; Leeks, 2/- to 2/6; white Turnips, 4/- per dozen; spring Cabbages, 8d.; Carrots, 1/4 to 1/6; Seakale, 2/- to 2/6; Radishes, 2/6 to 3/-; Endive, 3/-; Mint, 9/- to 12/-; and Teneriffe Potatos, 17/- to 18/6 per case.

THE WEATHER IN MARCH.

This was the march with most northerly winds since that of the year 1900, and had the highest mean air pressure of any month of its name during the fifty-four years' history of the Observatory. In consequence it was very dry, less than half the normal precipitation being measured. But though north-westerly and northerly winds each prevailed for more than double the average number of hours, the month was not cold, due easterly winds being nearly absent, and due westerly ones the most prevalent of any. Temperature was exceptionally equable. Sunshine, humidity, and evaporation were virtually normal. Ozone was very abundant. The mean temperature exceeded the average by half-a-degree. The mean day-to-night range of temperature was actually 3° smaller than usual. Nearly 117 hours of sunshine were recorded, or within two hours of the normal duration. Rain fell on 13 days, or two fewer than the average; and the total amount was only 1·08 inch, which implies a deficiency of 1·22 inches. A little hail fell on the 8th and 9th, and traces of snow were reported on the 8th and 21st. Ground-frost was registered on 14 nights, and frost in the shade on four nights. The only gale occurred on the 8th. A sea-fog occupied most of the 15th. Over part of the borough a thunderstorm was experienced on the afternoon of the 25th. *Joseph Baxendell, Borough Meteorologist, The Fernley Observatory, Southport.*

THE WEATHER IN SCOTLAND.

With the exception of the last two days, the month of March was remarkably dry. The total rainfall was only 1.23 inch, and of this amount the 30th contributed ·35 of an inch and the 31st, ·60. On the wettest day, rain, sleet and snow fell continuously from morning till late evening. Sunshine was just about normal for March, being an aggregate of 111·6 hours, a daily average of 3·6 hours and a percentage of 31. The brightest day was the 7th with nine hours sunshine. There were only four days when no sun was recorded. The mean maximum temperature was 46·7° and the mean minimum 35·1°, giving a mean temperature of 40·8° which is 1° above normal. The 15th gave the highest maximum, viz., 56°, and the lowest maximum of 38° occurred on the 8th and 21st. The lowest minimum of 27° occurred on the 22nd, and the highest minimum of 42° on the 6th and 30th. The grass minimum recorded 15 days of ground frost, the lowest point being reached on the 22nd, viz., 21° (or 11° of frost). The soil temperature at one foot deep rose 3° during the month and at present stands at 41°. A fairly high barometric pressure was maintained throughout the month. The highest reading of 1034.6 millibars was on the 4th, and the lowest reading of 1002.6 millibars on the 7th (a gradual fall unattended by high wind or rain locally). Winds were in the main south-westerly, and although at times high never reached gale force. Snow was recorded on four separate occasions, but only slight. Hail showers took place on the 23rd and 25th. Lunar Coronas on 3rd and 11th. A very brilliant rainbow was observed at 5.30 p.m. on the 25th and again on the 30th. Visibility was unusually good—only on the 18th was mist noted. *John Davidson, Meteorological Station, St. Andrew's Provincial Committee, Training College Gardens Mayfield, Dundee.*

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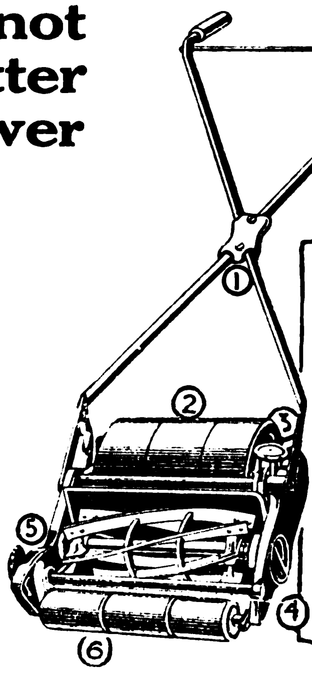

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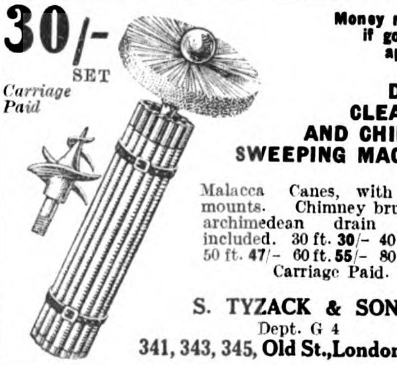

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THE

Gardeners' Chronicle

No. 2000.—*SATURDAY, APRIL* 25. 1925.

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Average Mean Temperature for the ensuing week deducted from observations during the last fifty years at Greenwich, 49·1°.

Actual Temperature—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, April 22, 10 a.m. Bar. 30·2, temp. 56°. Weather, Sunny.

On Slugs. Nothing is more annoying than to be caught napping—except to be caught in the same way a second time. And yet if report is to be believed not a few gardeners are suffering from this latter form of annoyance, and that because of the sudden and multitudinous prevalence of that ever present pest of the garden, the common slug. Of course, the slug we have always with us, but generally a moderate measure of vigilance, combined with special protection of valuable plants which are prone to suffer from their attention, suffices to prevent any wide-spread damage. Primulas in the moist woodland or by the waterside are always liable to attack, and anyone who does not take suitable precautions in good time cannot expect to have a good show of these most delightful of semi-shade loving plants. This year, however, the conditions seem to have been more than usually favourable to the pullulation of the slug, and many plants which are normally immune from the attack of occasional members of the slimy tribe have succumbed from their massed attack. Thus we have seen the tall and stately Crown Imperial cut off before its prime and bowed down as a result of the all too manifest voracity of the slug. Senecio Wilsonii and Senecio clivorum have, in the same garden, been attacked voraciously, and each rolled leaf as it emerges from the ground reduced to yellow shreds. In the case of this garden the gardener, pressed by arrears of work due to the same cause as the pest of slugs, namely, the prolonged wet winter and spring, was caught napping. Once the pest is discovered its control is not, however, difficult; the trouble is that unless a roving eye is kept on every valuable plant of the garden the damage is done before operations of control can be put into execution. Of old and well-tried remedies the garden books of a hundred years ago recommend barilla—a material the nature of which now needs a dictionary to determine. When kelp burning was common the crude salts, consisting chiefly of sodium carbonate, found their way to market, and were doubtless much used for washing and scrubbing. Their alkaline properties were well calculated to cause slugs to cease from troubling. In more modern times soot and quick lime have been advocated and are doubtless efficacious. Trapping, of course, is a good plan; Cabbage leaves in pieces and such-like vegetable traps, if turned over daily and the catch exterminated, serve for the riddance of large numbers of slugs. Another old and tried device is to dibble small, thimble-like holes in the ground and daily to water the holes, in which slugs are sure to be harbouring, with lime water. Among the best of all remedies and preventives is blue stone, that is, copper sulphate. If a drop of a weak solution touches the slimy body of a slug, death of the slug is assured. The skin turns white and there is an end to that pest. It is probable that those whose gardens are apt to be pestered with slugs would find relief by spreading finely powdered blue stone sparingly over the ground. A duster like that which is used for dry spraying of fruit trees would probably be the best tool to use where the area to be covered is large. Needless to say some care would have to be exercised lest too much of the poison were put on the ground, and there is, moreover, always the risk of injury to birds. We doubt, however, whether, used in small quantities, copper sulphate in powdered form would be likely to damage plants or birds. For those who do not like to risk the use of this method there is the hat-pin mode for use at evening time, and it is said that the use of waste cork dust—an innocuous substance—is a sure means of encompassing the death of the slugs. Of this material, however, we have had no experience. In the garden which prompted these observations the plague of slugs appears to have been encouraged by a liberal use as a mulching material of spent hops. The hops came direct from the brewery and were spread lightly on the ground. During the wet weather they became sodden, and appear to have served as most efficient breeding grounds for the pest. It would be interesting to know how far one of these slimy pestlets of the garden can travel in the course of its life. Slugs seem certainly to be able to go or to get anywhere, and one happy family in the same garden was found ensconced among the young shoots of Lychnis alpina in a rock wall three feet from the base and as much from the summit. The price of success in the garden is ceaseless vigilance. So far as this slug pest is concerned it might easily be prevented by running young ducks in the garden, but anyone who has tried that expedient knows that the remedy generally proves worse than the disease; for the duck is no respector either of pests or plants, and is, moreover, heavy footed, so that what ground it does not grub up it puddles down. No, the slug must be exterminated by more artful means—an electric torch and a drop-bottle containing a solution of blue stone is the means we most favour after trying many. A wet afternoon devoted to the hunt saves night work, and is sure to result in a good bag; but the wise gardener will not generally let things get to this pass. He knows that the slug is always present and takes his precautions to keep the pest within bounds.

Highfield Daffodil Show.—The twenty-two acres of ground under Daffodils and Gladioli which comprise the bulb farm of Mr. J. Montgomery Crawford, at Highfield, Ayrshire, were open to the inspection of the public on Saturday, the 18th instant, when a choice collection of cut blooms representing outstanding examples in Trumpet, Incomparabilis, Barrii and Leedsii varieties were staged indoors. Notwithstanding the unfavourable weather the function was largely attended and in addition to the general public and members of the trade, a deputation was present from the horticultural section of the Glenfield and Kennedy Welfare Association, Kilmarnock. The production of Daffodils as a commercial enterprise in Ayrshire was begun some eight years ago by the late Dr. Crawford of Ardlamont who won the Barr Challenge Cup in 1896, and the business is now under the supervision of his son.

Flowering Plants of South Africa.—No. 17 of Vol. V. of *The Flowering Plants of South Africa* contains illustrations and descriptions of ten flowering plants indigenous to South Africa. Cotyledon orbiculata, t. 161, is a very old plant in cultivation, and said to have been introduced to this country about the year 1690. This succulent plant has broadly ovate, glaucous foliage with a red margin. The inflorescence forms a panicle of cymes of some six or seven bright red, tubular flowers, with a yellow base; Synnotia bicolor, t. 162, is a bulbous plant allied to Ixia. This species was introduced to this country in 1786, and was first described as a Gladiolus and, subsequently, was figured in the *Bot. Mag.* as a species of Ixia. The flowers are irregular, with the hood and side segments stained with violet and the lip yellow. Gladiolus trichostachys, t. 163, is a yellow-flowered species closely allied to G. permeabilis. The flowers are much smaller than in the cultivated Gladiolus, but the species will probably be valuable to hybridists; Aloe Chabaudii, t. 164, was described and illustrated in *Gard. Chron.*, August 5, 1905, p. 102; Gladiolus orchidiflorus, t. 165, is a very distinct species, illustrated in *Bot. Mag.*, t. 688, under its synonym Gladiolus viperatus, owing to the fanciful resemblance of the flower to the head and appearance of the jaws of the snake when raising itself for defence against its enemy and hissing. The spike is not rigidly upright, as in most species of Gladiolus, but curved, and the hood is very narrow, like a long claw; the side segments are broader, and the lip is formed of the lower segments, which have a maroon blotch. The narrow standard is suffused with chocolate-brown, and there are brownish markings through the centre of the side segments which, as shown in the plate, are greyish-green; Lachenalia tricolor, t. 166, is an old plant in gardens; it has been cultivated in Europe for some one-hundred-and-fifty-years. It is one of the most graceful species of the genus; Crassula rosularis, t. 167, is a very attractive-looking plant with leaves, stem and flowers tinted with rose. The text states that it is a dainty little plant and will thrive on a shady rockery if supplied with humus and a fair amount of moisture. The dainty inflorescence has some resemblance to a spray of pink Astilbe; Lissochilus speciosus,

t. 168, is a well-known plant in cultivation, and was the species on which Robert Brown founded the genus. It is said to be common along the slopes of the sandhills of the Southern Natal coast; Aloe ferox, t. 169, was described by Miller in his *Gardeners' Dictionary*, and is the source of the Aloes of commerce. In its habitat the plant grows to eight-feet to twelve-feet tall, the older leaves dying and persisting. The columnar inflorescences of scarlet flowers are very striking; Leucadendron humifusum, t. 170, has been recently discovered after having been lost for about one hundred years. It is a member of the Proteaceae, and bears the sexes on different heads, which are comprised of several series of involucral bracts.

Trial of Motor Lawn Mowers in Regent's Park.—The Royal Horticultural Society's trial of Motor Lawn Mowers will take place at Regent's Park, London, N.W., on Wednesday, May 13, 1925, by kind permission of H.M. Office of Works and the courtesy of the Superintendent of the Park, Mr. D. Campbell. The trial will commence punctually at 10.30 a.m. All entries for the trial should reach The Director, R.H.S. Gardens, Wisley, Ripley, Surrey, on or before May 5. Machines for trial must be consigned carriage paid to "R.H.S. Motor Mower Trial, c/o The Superintendent, Inner Circle, Regents Park, London, N.W." and should be delivered there on Tuesday, May 12, 1925. Firms are at liberty to enter as many types of Motor Mowers as they please, as well as accessories thereto. A representative of the firm entering the mower should be in attendance to demonstrate the machine to the judges, and machines must be ready for work by 10 a.m. The fuel tank, however, should be empty until seen by the judges. If the judges deem it necessary the trial of any or all the machines entered shall be continued over a period to be decided on May 13. No replacement of parts or alterations, except minor adjustments, shall be permitted during the progress of the trial without the consent of the judges, who will take into consideration all such replacements or alterations. No literature of any kind may on any account be distributed to anyone at the trial or in the Park. Any literature which the entrant desires to bring to the notice of the judges must be sent in with the entry forms.

Honours for Belgian Horticulturists.—It is with great pleasure we learn that Mr. Emile Draps, President of the Royal Society of Horticulture of Antwerp, and President of the Antwerp Floralies in September, 1924; and Mr. R. Van Rysselberghe, Director of the Public Gardens of Antwerp, and General Secretary of the Royal Society of Horticulture and of the Antwerp Floralies, 1924, have been honoured with the Crown of Chevalier of the Order of the Belgian Crown. Mr. Alfred Janssens, an Orchid grower, Merxem, has received the Golden Palms of the same Order; he is a member of the administrative council of the two societies mentioned. We tender our congratulations to these friends who have rendered faithful service to Belgian horticulture.

Horticultural Activities in Ghent. — The Société Royal d'Agriculture et de Botanique de Gand (Belgium) is reviving, at the "Casino," the promenade concerts and other social occasions which were so appreciated by members before the war. The Casino, which is part of the premises owned by the Society, is in the centre of the town, with lovely grounds, eminently suitable for the "fêtes champêtres" which are such a prominent feature of French and Belgian social life in the summer months. The Society is also instituting competitions, with prizes, for the best gardens in East Flanders, and also for the best floral display at a railway station. Those who have seen the lovely beds of flowers at the railway station at Ghent itself will realise that the standard is a high one, and that competition is likely to be keen.

Mr. A. Bullock.—A native of Cornwall, Mr. Arthur Bullock commenced his gardening career at the famous gardens at Carclew which contain a fine collection of Rhododendrons and other choice trees and shrubs, including, if we remember rightly, a very fine specimen of the Lucombe Oak. After serving an apprenticeship of four years he passed on to the equally famous gardens at Lockinge Park, where he remained for two years, serving in the plant and fruit houses. His next appointment was at Halton, where he remained for two and a half years and was chiefly engaged in the forcing of fruits and vegetables. From Halton he passed on to Dover House, Roehampton, where he obtained valuable experience in the cultivation of plants, flowers and fruits in a garden always remarkable for the splendid manner in which it was maintained. Seeking further experience he obtained the position of general foreman in the gardens at Margam Abbey, South Wales, where he remained for about one year and then entered service under Mr. C. R. Fielder at Mote Park Gardens, Maidstone, then the residence of the late Lady Howard de Walden and was subsequently transferred with Mr. Fielder to her ladyship's garden at Malvern which was then in the making. Here he remained as foreman for five years and after the death of his employer, when various changes were made, he undertook the control of the gardens and managed them for a period of two years. It was while at Malvern that he was invited to take up the position of gardener at Copped Hall, Epping, the residence of E. J. Wythes, Esq. Here he has remained for twenty-three years and under the ample encouragement of his employers he has had the satisfaction of witnessing the success of his efforts to bring an old garden into line with modern requirements. Although Mr. Bullock has not been a frequent exhibitor he is very well known in the metropolitan district and has served on the Royal Horticultural Society's Fruit and Vegetable Committee since 1912. He is also a member of the Committee of the Gardeners' Royal Benevolent Institution, to which charity he renders excellent service.

MR. A. BULLOCK.

Examination and Certification of Apiaries.—The Ministry of Agriculture and Fisheries desires to give notice that arrangements have been made for the inspection, on application, of apiaries where bees are raised for sale. Where no brood diseases are found to be present in an apiary, an official certificate to that effect will be issued. For the present, it will not be possible to include Acarine disease in the scheme, and the certificates will relate solely to freedom from brood diseases, though they will not be issued for apiaries where Acarine disease is seen to be present. The frames containing the combs of the colonies that are passed on inspection will be stamped to that effect, and this will afford protection to the purchaser. Owners of apiaries where bees are raised for sale are invited to make early application for inspection. All applications should be addressed to the Secretary, Ministry of Agriculture and Fisheries, 10, Whitehall Place, London, S.W. 1. Fees at the rate of £2 2s. per day, with a minimum of £1 1s., will be charged for this service.

Imperial Fruit Show, 1925.—After holding two successive annual shows in the provinces, at Manchester and Birmingham, the Imperial Fruit Show Committee has decided to hold its exhibition during the present year in London, at Holland Park Rink, from October 30 to November 7. Those who propose to exhibit on this occasion may obtain particulars from the Secretary, Imperial Fruit Show, 18, Bedford Square, W.C. 1.

Forthcoming French Horticultural Conferences.—The seventeenth Conference of the Fédération Nationale des Syndicats Horticoles de France is to be held this year at St. Brieuc, from July 6 to July 8, and the Pomological Congress will take place at Toulouse, the dates being September 7 to September 9. The last-named event will be associated with an exhibition of fruits and flowers, and the agricultural authorities have accorded a subsidy of 10,000 francs towards the expenses.

A Giant Wistaria at Wistaria Town.—From Mr. C. B. Ussher we have received a newspaper cutting and coloured poster referring to a Wistaria Fête at Wistaria Town, Los Angeles County, California. We gather that Wistaria Town—or Sierra Madre—is at the foot of Mount Wilson, and seventeen miles east of Los Angeles. The Fête is organised for the benefit of the building fund of the Sierra Madre Women's Club, and the centre of the function is a giant Wistaria at the home of Mr. and Mrs. H. T. Fennel, at Scenic Point. This fine specimen was planted in 1893, and its roots are on the south side of the house; the branches have been trained both east and west, and meet at the rear of the house, where they are continued along a pergola. The total length of the Wistaria is 300-feet. Scenic Point—which overlooks the San Gabriel Valley—is 1,150 feet above sea-level, and the average rainfall over a period of thirty years is twenty-five inches. In 1924 no fewer than 30,000 visitors saw this Wistaria in full bloom. During the present year it was open to inspection from March 14 to March 29. The coloured poster—a reproduction from a photograph—shows a wonderful display of blooms along the pergola, with Cherokee, Gold of Ophir, and Duchess de Brabant Roses adding to the general effect.

National Tulip Society.—With the permission of the Royal Horticultural Society, the National Tulip Society will hold an exhibition in the committee tent, on the second and subsequent days of the Chelsea Show as in former years. Particulars may be obtained from the Hon. Secretary, Mr. W. Peters, 6, Union Road, Cambridge.

Glasgow Flower Show.—We learn from the secretary that arrangements are well advanced for the flower show to be held in the Kelvin Hall, Glasgow, on September 1, 2, and 3. This will be the fourth year in succession that the show has been held under the joint auspices of the Glasgow Corporation and the Glasgow and West of

Scotland Horticultural Society. Last year there were close on 5,000 entries, and it is expected that this number will be equalled, if not exceeded, at the coming show. A goodly amount of space has been set apart for trade exhibitors. These have been divided into four classes—materials for preparation, planting and maintenance of the garden; garden tools, implements, and appliances; garden structures, etc.; and miscellaneous. The opening ceremony of the show will be performed by the Lady Maud Carnegie (H.R.H. the Princess Maud). Applications for prospectuses should be made to Mr. Cecil Sommerville, general manager, Kelvin Hall, Glasgow.

International Apis Club.—A conference of the International Apis Club was held at Kilmarnock on the 11th inst. under the presidency of Mr. Alexander McCullum, Senior Inspector of the Board of Agriculture, and there was a good and representative attendance of members. In the forenoon a visit was made to the Apiary of the West of Scotland College at Holmes Farm, were Mr. Joseph Tinsley, the College lecturer, gave a demonstration and explained the experimental work that was being carried on with regard to wintering, breeding, and tests in relation to colour upon the home of the bee. At the afternoon session held in the Ossington Hotel, the following papers were read and discussed: "Some Bee-keeping Problems," by Mr. G. W. Avery, lecturer at Edinburgh College of Agriculture; "Experiments on the Production of Heather Honey," by Mr. William Hamilton, assistant lecturer at the West of Scotland College; "Warmth and the Bee," by Mr. D. Morland, Rothamsted Institute, Harpenden; and "Some Giants of those Days," by Mr. John Anderson, lecturer at the Aberdeen College of Agriculture.

Appointments for the Ensuing Week.—Tuesday, April 28.—Newcastle and District Horticultural Mutual Improvement Society's lecture. Wednesday, April 29. — Mitcham, Tooting and District Horticultural Society's meeting.—Friday, May 1.—Manchester and North of England Orchid Society's meeting. Saturday, May 2.—Blackburn and District Horticultural Society's meeting and lecture.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Lamp Black.*—Lamp black is, I believe, the very best material to mix with oil as a protective paint for any surface exposed to the action of the weather. In proof of this it is only necessary to examine the condition of any old notice board which has been painted in the usual manner with black letters on a white-lead ground. In many instances I have found that the black letters remain perfectly distinct long after the white-lead ground has perished and been dissolved, excepting where it has been protected by the thin film of carbonaceous covering formed by the black letters. I have an instance at hand, in which the black letters stand out in clear relief or projection, in consequence of the perishing of the surface of the wood, as well as the solution of the white-lead paint which originally covered it. This is no more than might have been expected from the well-known action of lead on oils, which has the effect of destroying the elasticity and toughness of the oil to such an extent as eventually to render it as brittle as glass, and also of converting it into a kind of soap of slow but certain solubility. Lamp black being one of the most unchangeable substances in nature, excepting by actual ignition, it neither acts nor is acted upon by the oil and its particles are too fine to have any injurious mechanical influence. Next in value to lamp black I would rank finely ground anthracite. *J. Howard. Gard. Chron., April* 27, 1850.

Publications Received.—*The Romance of the Fungus World.* By R. T. and T. W. Rolfe. Chapman and Hall, 11, Henrietta Street, Covent Garden, W.C. 2. Price 12s. 6d. net.

BULB GARDEN.

THE SUMMER SNOWFLAKE.

Leucojum aestivum, the Summer Snowflake suffers from the lack of size in its flowers, these appearing puny in proportion to the length of the stems. This would be less evident and the real beauty of the plant would be more appreciated were we to grow it under different conditions from those of the ordinary border, which at present is its usual provision.

It is a native of wet meadows, and there the grass through which the plant springs makes the stems appear shorter. The length of stem is thus rendered necessary by its natural surroundings, and this should be a guide in planting. It may be utilised with advantage for the wild garden, especially in moist spots, and in late April or May the drooping flowers of white, so charmingly tipped with green would present a pretty picture. Another method of planting, which I have seen employed with wonderfully good effect, has been to set groups of bulbs in water about six inches deep, the bulbs being planted in the bed of the pond with the crowns about an inch deep in the soil. This depth of water is quite sufficient to mask the length of the stems. The Summer Snowflake will grow and flower in a border but is not so fine there as in moister places. In some gardens Leucojum aestivum is shy of flowering, the reason being difficult to ascertain. *S. Arnott.*

TULIPA EICHLERI.

Few Tulips can vie with this grand species for brilliant colouring, except its near congener T. Fosteriana and perhaps T. Greigii. The perianth is bright crimson or nearly scarlet, with a distinct black blotch spread over the claw, and a yellow margin; the leaves are a greyish-green. The species is near to T. gesneriana, but differs in one important detail, inasmuch as it possesses a pubescent peduncle.

Flowering in April and early May, this Tulip is an outstanding feature in the rockery or bulb border, the vivid colouring of the large, obovate and obtuse segments giving a most brilliant effect; the bulbs may be left in the ground for two or three seasons with fair hope of success, but lifting and cleansing them annually is preferable. A well-drained, sandy loam and a situation exposed to full sunshine suit this grand Tulip.

T. Eichleri is a native of Georgia and was introduced in 1874; it is figured in *Bot. Mag.*, tab. 6191. *Ralph E. Arnold.*

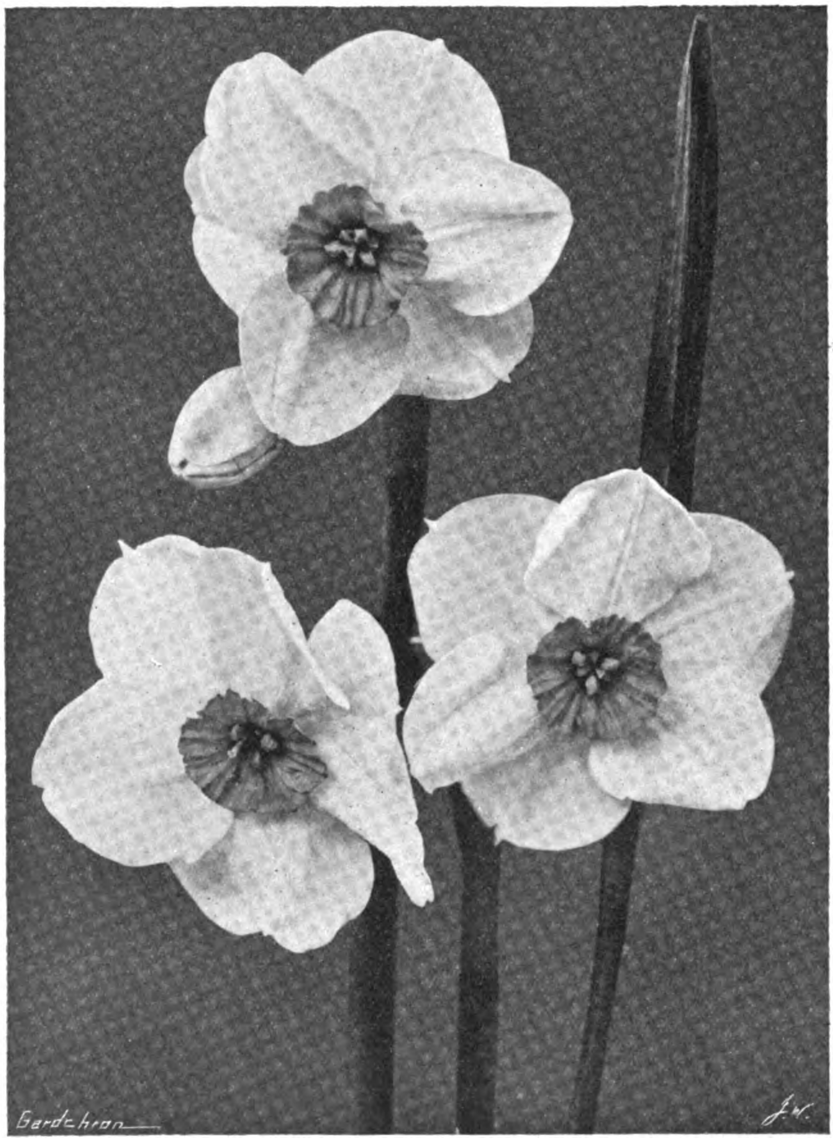

FIG. 114.—NARCISSUS KINGCROFT.

R.H.S. Award of Merit, April 15. A twin-flowered Poetaz variety, white, with orange crown (see p. 274).

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Maxillaria.—Such well-known species of Maxillaria as M. venusta, M. Mooreana, M. picta, and M. candida are becoming active at the roots, and the necessary re-pottting should be given attention. As a rule these plants develop numerous small roots, and they require plenty of surface space to extend in. These Maxillarias may be cultivated in pots or somewhat shallow pans, rather more than half-filled with material for drainage. The soil may consist of equal parts Osmunda-fibre and Sphagnum-moss cut into small portions, with sufficient small crocks added to render the compost very porous, for although Maxillarias require an abundance of water when growing actively the roots soon begin to decay in a close, stagnant medium. In re-potting the plants, press the compost firmly around their bases. They should then be placed in a shady position in a house having an intermediate temperature, and watered carefully, pouring the water around the inner edges of the pots in order that it may not lodge in the young growths. Such species as M. Sanderiana and M. Lindenii, that flower at this season of the year, are best grown in Teak-wood baskets, as the flower spikes sometimes push downwards through the bottom of the receptacle. For this reason crocks should not be used for drainage, but a loose layer of Osmunda-fibre spread over the bottom of the basket. The re-potting of these two species, together with M. Hubschii, should not be done until after they have passed out of flower.

Anguloa.—Many plants of this interesting genus are making young growths and developing flower-spikes. After the latter are removed the plants may be repotted; specimens not flowering may be dealt with at once. The most desirable species to grow embrace such as A. Cliftonii, A. Clowesii, A. Ruckeri, A. eburnea, and A. uniflora. Anguloas are strong-rooting plants and require a retentive compost which may consist of equal parts fibrous loam and Osmunda-fibre, with a small portion of chopped Sphagnum-moss and crushed crocks. In re-potting reduce the ball of old soil, cut away all dead roots, and remove any unnecessary back pseudo-bulbs. Make the compost firm. The plants will thrive in a shady part of the intermediate house or at the warmer end of the cool division. Water the plants sparingly until after the roots have grown well into the new soil, and take care that moisture does not accumulate in the young shoots, or they may decay at their bases. During the season of active growth the foliage, and especially the undersides of the leaves should be examined at intervals for the presence of red spider; if the pest is detected sponge the leaves with a weak insecticide.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Waterside Plants.—There is a large number of beautiful plants which delight in the moist conditions prevailing in the ground immediately surrounding the lake. The herbaceous Spiraeas, S. Aruncus, S. Ulmaria, and S. gigantea are ideal subjects for such a position, the latter reaching gigantic dimensions. Several of the Senecios, notably S. clivorum, S. Veitchii, and S. Ledebouri form fine groups of strong-growing, yellow flowering plants very suitable for positions near the water's edge, as also does their kindred plant Buphthalmum speciosum. The giant Dock, Rumex Hydrolapathum is of distinct habit, and its long leaves take on a fine, brilliant red colour in autumn. Heracleum giganteum is also a good waterside ornament, and Thalictrum flavum attains extraordinary dimensions in such a position. Polygonum sachalinense and P. cuspidatum (syn. Sieboldii) are noble looking plants but need plenty of space, whilst the Gunneras thrive in a position near the water margin and make objects of striking beauty. Bamboos also thrive exceedingly well in the moist soil surrounding the lake, but they should not be planted in exposed positions. It frequently happens that the overflow from a lake forms a stream or rivulet, the sides of which offer homes for a host of other plants of a dwarfer nature. Mimulus luteus and Myosotis palustris are fine plants for the stream-side, and when once planted they take care of themselves. For early effect Caltha palustris and its varieties are excellent with their large, golden flowers. Sparganium ramosum, with its bright green foliage is also an attractive plant. Rodgersia tabularis and R. podophylla, the one with bright green, round leaves, and the other with bronze, deeply divided foliage afford a good contrast and thrive by the stream-side. Lythrum Salicaria and Lysimachia vulgaris are also worthy of a place here, and where room is available, Petasites vulgaris, with its large leaves and feathery, fragrant flowers may be included. A stretch of the stream-side may also be made very interesting and attractive by clothing it with the Male Fern and the Lady Fern. Here also Osmunda, Onoclea, Blechnum, Ceterach and Scolopendrium find congenial conditions.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Ruellia macrantha.—This is another useful winter-flowering plant requiring stove treatment, bearing trumpet-shaped flowers of a pleasing, rosy-purplish colour. It is easily propagated, and is a fairly strong grower, requiring a somewhat heavier soil than Plumbago (see p. 264). After becoming established in the flowering pots, which need not be larger than six-inches in diameter for the strongest of the young plants, plenty of water should be given the roots and the plants should be fed fairly liberally, when they will flower very freely and continuously throughout the autumn and early winter.

Libonia floribunda.—This is a plant which responds to a cooler treatment than Plumbago and Ruellia, and is a very useful subject for winter flowering. One-year-old plants cut back in the spring and started in warmth give the best results during the following winter, but a sufficient number of young plants to provide stock should be raised from cuttings each year. These plants will also form useful flowering specimens in the following winter. A mixture of loam, well-decayed manure, and sand forms the best compost. Warm-house treatment should be afforded in spring and early summer; after that, cool-house or frame accommodation should be given, with a free admission of air to keep the plants sturdy. On well-grown plants the pretty, scarlet, yellow-tipped, tubular flowers are borne in abundance throughout the winter and early spring.

Violets in Frames.—Runners to provide sufficient stock for next autumn should be taken from the old plants and planted on the first favourable opportunity after this date, if not already done. An ideal summer situation for Violets is on a border under a wall providing shelter from the afternoon sun. The ground should be dug deeply and worked to a good tilth, having previously received a liberal dressing of wood-ash and soot. Choose a dull, warm day for planting the runners, spacing the double varieties at one-foot apart and the single varieties at a distance of fifteen-inches.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

The Orchard Houses.—Most of the trees have finished flowering and the weather has been most favourable for a good set of fruits. Do not attempt to thin the latter too soon but wait until it can be seen which of them are swelling and of a good shape. A considerable number of embryo Pears, Cherries, and Apples often drop after swelling to a good size, so that the grower needs to be extra careful in thinning them, especially after a dull summer such as that of last year. Syringe the trees with tepid soft water if possible twice daily, thoroughly wetting the under-sides of the leaves. I prefer to fumigate to keep down pests whenever possible, making quite sure the foliage is dry and the temperature of the house low. During hot days ventilate the house as freely as possible; in opening the front ventilators or shutters see that no cold draughts enter to injure the young foliage. The stopping and training of the shoots will take considerable time and must be promptly attended to. Pinch the growths not required for extension at the fifth leaf. So soon as the young fruits are seen to be swelling give the roots a little stimulant, and in using fertilisers follow the directions of the makers. Keep the trees well supplied with water; the roots are very active and a check from drought will be fatal to success; neither must the borders become sodden or stagnant. Endeavour to have the soil in a sweet, medium condition of moisture. Where slight forcing is being attempted use a little fire-heat at 9 p.m., but shut off the heat first thing in the morning. See that the houses are kept perfectly clean. Burn all thinnings, pieces of matting, etc., after each operation. Damp the bare spaces, such as the paths, with manure water on frequent occasions at night.

Figs.—Young pot Figs raised from cuttings rooted this season having filled the five-inch pots in which they are growing, require shifting into seven-inch pots. Use a compost of three parts good fibrous loam, one part well-decayed manure, one part mortar rubble finely broken, and a dash of bone-meal. Pot very firmly and re-plunge the pots in a bed of leaves, maintaining a temperature of 60° by night and 70° by day. Thoroughly spray the young plants twice daily, and admit air very cautiously, closing the house at 2 p.m. (sun time). Keep the floors well damped at all times. Attention should be given to all Fig trees planted permanently in narrow borders in watering, stopping the growths, and training in the best-placed shoots for extension. All thin shoots that are not needed for furnishing the tree should be pinched out to allow full leaf development on the shoots required for the next crop. Thin the fruits for the final time when it can be seen which are swelling freely.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

The Loganberry. This is a very popular fruit and one of the most useful members of the Rubus family, the berries being valuable for a variety of purposes, including bottling and preserving. If the old fruiting canes were cut out at the proper time and the new shoots trained to their supports, the latter should be well ripened. As the young shoots develop tie in sufficient for bearing next year's crop and cut out surplus ones. It is not too late to plant young Loganberries from pots; this should be done with care so as not to damage the roots. If the ground is on the dry side give the plants a liberal watering and as they advance in growth, attend to the supporting of them with stakes. Do not tie the growths so tightly as to damage them.

The Lowberry.—This also is a very useful fruit, although a little tender, and requires much the same treatment as advised for the Loganberry. The flavour of the fruits is more after that of the Blackberry.

The Newberry.—This hybrid Rubus is not quite so much known or grown as the two mentioned, but it is considered by many quite as good as the Loganberry.

The Blackberry.—The common Blackberry under cultivation and planted where the roots receive plenty of moisture gives good results. On strong growths the berries are larger and of better flavour than those of the wildling.

The Parsley-leaved Blackberry.—This is another useful Rubus, both for its ornamental value as a climber and for its fruits. It looks well when trained on archways or fencing. Like the above fruits this Blackberry requires strict attention in removing all unnecessary growths.

Autumn-fruiting Raspberries.—These may be planted now. The variety Lloyd George is one of the best and for autumn fruiting the canes should be cut down to within a few inches of the ground, selecting sufficient of the new growths for cropping. The Hailsham Berry is another good autumn fruiting Raspberry. If the old canes are cut down now and the young canes allowed to develop they will give good returns.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Tomatos.—The first trusses of fruits of the earliest Tomatos will now be swelling fast, and the plants require some assistance in feeding the roots. This should be done sparingly, as many batches of Tomatos are partially spoiled through an overdose of artificial manure. The flowers of later trusses should be artificially pollinated. So soon as lateral growths appear they should be removed and every attention given to tying and watering the plants. Careful ventilation and correct watering are great assets in keeping Tomato plants free from disease. Pot on later batches of plants that are ready for repotting, never allowing the plants to become pot-bound.

Celery.—Seedling Celery growing in pans or boxes for the early supplies should be pricked off into frames. Frames that have been cleared of Lettuces or early Cabbage and Brussel Sprouts, may be utilised for this purpose. It is always advisable, even for frame work, to have a system of cultivation worked out from the beginning of the year, so that the most may be made of them.

French Beans.—The present is a suitable time to make a last sowing of French Beans in houses or in heated frames, and these should suffice to maintain supplies until the first picking out-of-doors. A small sowing of French Beans and also Waxpod Beans may now be risked outside in one of the warmest corners of the garden. Suitable varieties for all purposes are Perpetual, Superlative, Sunrise, and Canadian Wonder. In establishments where the Beans are used whole for cooking varieties such as Canadian Wonder are too large.

Ground Work.—As ground becomes vacant through the clearing away of Brussel Sprouts, Kale, Sprouting Broccoli, etc., it should be trenched and prepared for whatever crop is intended to follow. These plots are always valuable for planting late Potatos, maincrop Beetroot, and successional batches of Carrots and Turnips.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Hardy Nymphaeas.—The present is a suitable time for cleaning out ponds and basins wherein Wator-Lilies are grown; fresh groups may also be planted now and clumps divided, as may be considered necessary before growth commences. In planting a fresh clump of Nymphaeas arrange a mound of soil and press it firmly together. Place whole turves over the soil and peg them firmly to the mound. Sever the rhizomes with a sharp spade or edging iron and lift the portions with as many roots as possible. Plant firmly on the mound leaving the crown well exposed. Other plants in the pond may be given assistance by placing fresh turves around their crowns. Strong-growing varieties of Nymphaeas require to be divided frequently to avoid overcrowding of the foliage. Immediately the water is drawn off place wet sacking over the plants and only remove the sacking when refilling the pool with water, for these plants readily suffer if exposed to the action of direct sun or wind.

Japanese Irises.—New growth is now in evidence on these plants and the work of replanting such as need this attention should be completed without delay. All dead foliage may be cut neatly from the plants, and the surface soil stirred with the fork, and if the soil is light in texture a dressing of cow manure may be applied. During the growing season this Iris revels in moist conditions, and frequent floodings during dry periods are beneficial to it.

Vegetable Marrows.—Seeds of Vegetable Marrow may now be sown in 4-inch pots. Provide drainage in the usual way and fill the pots to within half-an-inch of the rim with light loam. Place two seeds in each pot and remove the weaker seedling when it is evident which is the better specimen. The varieties Long Green and Long White are free-fruiting and reliable sorts.

Celery.—Trenches may now be prepared for Celery. The ridges may be utilised for sowing seeds of Lettuce, Turnips and Radish or any crop that will not hinder earthing operations later. Whilst the seedlings are gaining strength in the seed-boxes the soil in the trenches will become ameliorated, and the manure in the bottom sink and become consolidated, thus ensuring perfect conditions for planting.

INDOOR PLANTS.

FREESIAS IN HANGING BASKETS.

References have been made in your paper to the cultivation of Freesias in hanging baskets. I therefore enclose a photograph (Fig. 115), taken by Mr. Tribe, showing two baskets of Freesias in our conservatory, as the illustration may interest many of your readers. These Freesias are grown by my second gardener, Mr. Andrews, with great success, in wire baskets. The baskets are lined with moss, and sandy soil is then used, and the Freesia corms are "built" in about two-and-a-half-inches from the wire frame, all round. The growths take the shortest route to the light, consequently flowers appear all round the basket. There is no great art in producing a fine effect, provided the corms have been thoroughly well dried off before planting is done and the usual attention is paid to watering and cleanliness. *Arthur A. Dorrien Smith, Tresco Abbey, Isles of Scilly.*

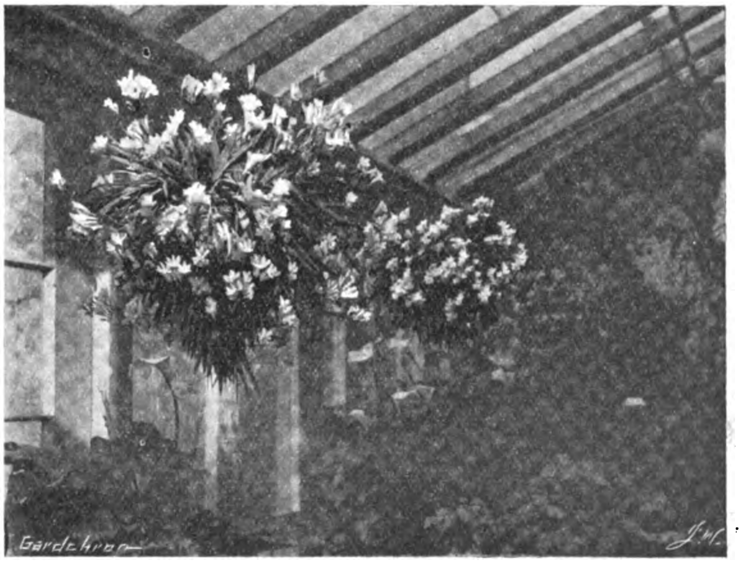

FIG.—115.—FREESIAS IN HANGING BASKETS AT TRESCO ABBEY.

NOTES ON FREESIAS.

Types of Flower.

The experience of the past few years has taught me that there are various types of flower among Freesias which at the present time to a large extent are representative of the different raisers of new varieties. I think it was old Peter Barr, of Daffodil fame, who said, "Show me a man's flowers and I will tell you what sort of man he is."

Something akin to this appears to be true of Freesias. When I compare the flowers in the fine, large exhibit that Mr. Dalrymple staged in the R.H.S. Hall on April 7 with my own flowers, I feel pretty confident that had I put up a similar group of my own seedlings anyone would have at once seen the difference of shape of the generality of the flowers in the two exhibits. Mine are much the more open. It is, of course, entirely a matter of taste, but when I placed a mixed bunch of my hybrids before the R.H.S. Scientific Committee in March, and was awarded a Certificate of Appreciation, the Chairman said it was granted me for the way in which I had widened, or opened out, the individual blooms. To put it in a concrete form, I much prefer the more open, spread-out flower of Flame to the more tubular flower of Golden King; and I breed with the "open" ideal before me.

There is also the wide, tea-cup shaped type which we get in Apogee, Buttercup, and Apotheose, which seems to be the ideal of the Dutch firm of Van Tubergen. Lastly, there are two types which I put down as American. First, the short-tubed, open-topped blooms that gave every one of the six varieties that I had this year an unmistakable family likeness; California, a sort of buff-yellow, and Olivette, a most pleasing mixture of bright and dull crimson, are examples. Secondly, the sharp-pointed-petalled type. Flowers with this characteristic stood out as something very distinct in the first lot of American sorts that I grew. They took my fancy very much, and ever since I have been trying to produce something of the kind in my own seedlings. My Lemon Queen, which received an Award of Merit this year, is my high water mark in this direction. The ancient Rocket beside the latest L.M.S. express engine does not present a greater contrast than is to be seen between the Freesia pictured in the *Botanical Register* of 1816 and these modern flowers which I have just roughly described. Let them all be perpetuated; do not let us repeat the mistake made with Dahlias and discard all but one solitary type.

COLOUR.

It is a mistake to believe that weather, climate, environment, and insect life do better work than man. Compare the beautiful flowers growers have been the means of producing with their prehistoric beginnings! It is only a make-believe to pretend to like the wild flowers of nature at the expense of man-made ones.

It is very wonderful what has been done with colour in Freesias. There may never be a Forget-me-Not blue, but in Mr. Dalrymple's Wistaria we have a Michaelmas Daisy blue. We may never get a sealing-wax red but in the American Olivette there is true crimson. When F. aurea was first flowered at Colchester, did anyone visualise such a deep yellow as Orange King? Then think how the pale Primrose hue of F. Leitchlinii has become the deeper-toned and larger Apogee and Treasure. And lastly, how Armstrong's lucky find of a washy pink-mauve has blossomed into a Dainty, an Apotheose, a Rosebud, a Wistaria, and a Rose Prince!

Whites lag behind. Mr. Felton, the eminent florist, said to me: "We could do with a good white." Fischer's Purity is the best up to date, with the exception (?) of Fischeri, which in John Scheeper's (New York) list is stated to be "the largest and finest pure white available to-day." I have not seen it, but I am sure that good as Purity is there is room for improvement. *Joseph Jacob.*

A SELECTION OF AMERICAN WILLOWS.

(*Continued from p.* 204.)

The next four sections to be dealt with contain a number of very interesting dwarf species, especially from the high mountains of the West and from the polar regions.

The first comprises the well-known European group Reticulatae, the type of which, Salix reticulata, was once regarded by A. Kerner von Marilaun as the representative of the new genus Chamitea. There is, however, no reason at all to separate this type from the true Salix. It occupies, of course, a rather exceptional position, but this becomes less remarkable by the addition of S. nivalis. By including S. leiolepis, with glabrous ovaries, the characters of these sections are further changed. The American forms of S. reticulata do not differ essentially from those of the Old World. This Willow has the most extensive range of all the known species. From a horticultural standpoint it is an excellent plant for rock-gardens. And this can also be said of the other American species of this section. It is a pity that S. vestita has not been seen more often in our gardens. The typical north-eastern form is rather dwarf while the western var. erecta (also called S. Fernaldii) forms a stiffer, more erect shrub, occasionally up to one metre in height.

Of peculiar interest is a species from Western Newfoundland, S. leiolepis, which in habit and foliage closely simulates S. reticulata and the very dwarfed alpine extreme of S. vestita; but it differs from both in the glabrous scales and capsules. The male sex is not yet known, and it may after all be nothing but a glabrate variety and rather dwarfed alpine form of S. vestita. A very small, high alpine Willow from the Rocky Mountains is S. nivalis, one of the nicest Willows for rock-gardens and not larger than the well-known European S. serpyllifolia. A more vigorous form of S. nivalis is var. saximontana (syn. S. saximontana, S. aemulans) somewhat resembling in its habit S. retusa. It is widely spread on the mountains from northern New Mexico to British Columbia. I have not yet met with S. nivalis and S. leiolepis in European collections, but they ought to be introduced.

Of the section Herbaceae there are some very useful American species of much greater horticultural value than even S. herbacea. This species is entirely absent from western North America, while in the east it is found on the mountains of New Hampshire and Maine, on the western shores of Hudson Bay and in western as well as eastern Greenland. Its range in Europe and Asia is even more extensive than that of S. reticulata. It is a very homogeneous species. In gardens it is sometimes found under the name S. polaris, the true plant of this name being very rare and somewhat difficult in cultivation. Whether the American S. polaris from the Alaskan coast is really identical with the typical form I am not sure. Its systematic position is rather uncertain too. The same must be said of S. Uva-ursi, a fine alpine species from North-eastern America up to South-western Greenland. It is a peculiar Willow because its male flowers have only one stamen. I collected it myself on the White Mountains in New Hampshire, where it forms one of the main features of the vegetation in the alpine region. Here I met with a most interesting hybrid of S. Uva-ursi with S. herbacea; S. Peasei, first collected by Pease, described in 1917 by him and Fernald. As I have already stated in *Bot. Gaz.* (1919) I am almost sure that it has to be regarded as of hybrid origin. I visited the type locality, King's ravine, on September 18, 1918, and I found the Willow growing in about the altitude given by Fernald on wet cliffs in company with S. herbacea. S. Uva-ursi is very common at a somewhat higher level, but I collected plants of it which were growing just above the place where I saw S. herbacea and S. Peasei close together. Some plants of it looked much like vigorous S. herbacea, while others at first sight could easily be taken for S. Uva-ursi. I brought living specimens to the Arnold Arboretum, and I hope they are still there. Both S. Uva-ursi and S. Peasei are useful vigorous dwarf shrubs for the alpine garden. S. Uva-ursi is also known as S. Cutleri, and Lundstroem's S. ivigtutiana from Greenland is nothing but typical S. Uva-ursi.

Two very graceful, minute species of the same section are S. phlebophylla and S. Dodgeana. The latter is, so far, only known from two mountains in Wyoming, while S. phlebophylla is an Alaskan species but also has been collected on the Siberian coast of Bering Strait on Arakam or Kayne Island. It is near S. rotundifolia which grows on the islands and both shores of Bering Sea and the Arctic Ocean, and above the timber line on the Pacific coast of Alaska. On all the three species the old dry leaves usually last until the second year or even longer. I do not know if this would also be the case under cultivation. None of them has hitherto been introduced to our gardens. They, probably, need the same treatment as S. herbacea or S. retusa, to which they have been referred by former authors. S. Dodgeana is a very little known species, the systematic position of which is not yet quite understood.

The last Willow of the group Herbaceae I have to mention is also a peculiar alpine species, the true affinity of which is still somewhat doubtful. It has narrower leaves than either S. phlebophylla or S. rotundifolia, and the male flowers sometimes possess only one gland. The catkins are much like those of S. phlebophylla. According to some authors it is more closely related to S. petrophila of the next section, but from my own observations the old leaves are persistent in the same manner as in S. phlebophylla. It would be very interesting to introduce all these alpine Willows so that they might be studied in our gardens.

OTHER ALPINE WILLOWS.

The next section comprising a series of arctic and alpine Willows is one of the most difficult of the American Salices. It ought to be named Arcticae, but this name can not be used. I took up the name Ovalifoliae for the following six or seven species, which all need a thorough study of living plants in their native home as well as in our gardens. Some of them, like S. arctica, have already been in cultivation, but most of the plants cultivated under this name by no means represent the true S. arctica. I have discussed the history of this species in *Bot. Gaz.* LXVI (August, 1918), and so far as I can see it is represented in the New World only in Alaska, the Yukon Territory, and the adjacent part of the north-west corner of British Columbia. There is also a rather well marked variety in southern British Columbia. In the eastern half of the northern part of the American continent the true S. arctica is not to be found. Here we find S. anglorum, Chamisso (syn. S. arctica of Rob. Brown, not of Pallas). This is a widespread and variable American species. From a horticultural point of view it is hardly different from S. arctica proper. For our gardens we should try forms like var. kokophylla from Newfoundland; var. araioclada from the Gaspé Peninsula, British Columbia and Alberta; and var. antiplasta from the serpentine slopes of Mount Albert in the Gaspé Peninsula. These forms, and the similar species S. petrophila from the Rocky Mountains are certainly useful for our rock gardens.

This is true, also, of the following three species, I include in the same group: S. stolonifera, S. ovalifolia, and S. groenlandica. S. stolonifera, from the glacier region of eastern Alaska, is a peculiar creeping plant with slender, leafless, subterranean stolons. S. ovalifolia, which probably inhabits both shores of the Bering Strait, has some particular form that needs further study. It would be of great value to compare it in a living state with S. groenlandica or S. arctophila from Western Greenland, Labrador and Newfoundland.

All the alpine and arctic species of which I have just written should grow easily under the same conditions as our European alpine Willows such as S. retusa, and S. reticulata. They may be raised freely from cuttings or stolons, which could be sent to Europe from their native countries. *Camillo Schneider.*

(*To be continued.*)

TREES AND SHRUBS.

SKIMMIA LAUREOLA.

The bulk of the Skimmias in gardens consists of varieties or forms of S. japonica, though S Fortunei is fairly plentiful at present. S. Laureola is rare in gardens, but there is a bush of it in the gardens of the Royal Horticultural Society, at Wisley, about a yard high and showing flowers. At a casual glance one would take it for Daphne Laureola, which grows close by it. The evergreen leaves vary from lanceolate to obovate and resemble those of the Daphne very closely. The greenish yellow flowers are produced in a terminal panicle, however, like the rest of the Skimmias, whereas those of the Daphne are thickly clustered among the upper leaves. One need only to handle the leaves to find another difference, for they give off a very powerful odour like some other members of the Rutaceæ to which it belongs. Some people dislike the odour, but it is not so pungent as that of the Californian Laurel, Umbellularia californica. It would seem, however, judging from the names given it, that some regard the plant as fragrant, for Roemer describes it as Laureola fragrans, and Skimmia aromatica is a garden name for it. The shrub is certainly as evergreen and ornamental as Daphne Laureola and D. pontica. *J. F.*

YUCCAS.

The Yuccas form a group of handsome Liliaceous plants comprising about a score of species, half of which may be considered suitable for growing out-of-doors in this country. These are amongst the most graceful of plants, and produce charming effects planted either singly or in groups on the lawn. They are also well adapted for planting on or near the top part of the rockery on sloping mounds, and they also look well in the centre of beds with dwarf shrubs or suitable bedding plants grouped around them. As winter bedding subjects and for filling tubs and vases for winter decoration they have few equals. They succeed best in a fairly rich, well-drained, warm soil, and will often grow to a height of six feet or more.

Y. gloriosa (Adam's Needle) is a well-known species, having been introduced from North America upwards of three hundred years ago. It is of vigorous growth, with flat, sharply-pointed leaves, and on warm soils throws up its flower spikes in July and August. The pendent, bell-shaped flowers are white, tinged with purple on the exterior.

Y. g. acuminata bears some resemblance to the type, but has narrower leaves of a deeper green. Y. g. superba is distinct on account of its dwarfer habit, and it flowers in quite a small state, the greenish-white flowers being borne in branching panicles. Y. g. variegata is a prettily variegated form which remains quite constant.

Y. recurvifolia is a similar plant, but it has recurved, not sharp-pointed leaves, and presents a rather more graceful habit than Y. gloriosa. It is, indeed, the most elegant of all the hardy Yuccas, and if only one kind can be grown this is the one that should be selected. It is quite hardy, and its long, glossy leaves droop gracefully, while its handsome flower spikes are borne on medium-sized plants.

Y. angustifolia is a dwarf species with long, narrow, recurving leaves furnished with numerous filaments on the margins and is very beautiful when in flower. Y. filamentosa is almost stemless and is remarkable for the loose threads on the margins of the leaves, which gives the plant its characteristic appearance. The spikes carry an abundance of pure white flowers. Y. f. variegata is a beautiful variety with cream-white variegation. Although it succeeds out-of-doors in favoured positions, it grows more freely and the leaf colour is more beautiful when cultivated under glass.

Yuccas may be propagated by root-cuttings. Cut the thick, fleshy roots into pieces, plant in boxes of sandy soil and place them in gentle warmth. The soil should be kept moderately moist but not wet, or the roots will rot. So soon as the young plants have made a few leaves they should be potted into pots of a convenient size and when established removed to cooler quarters and finally outside. Seed rarely comes to perfection in this country, but if imported seeds are sown in light soil in boxes or pans they will germinate freely in gentle heat. *W. Auton.*

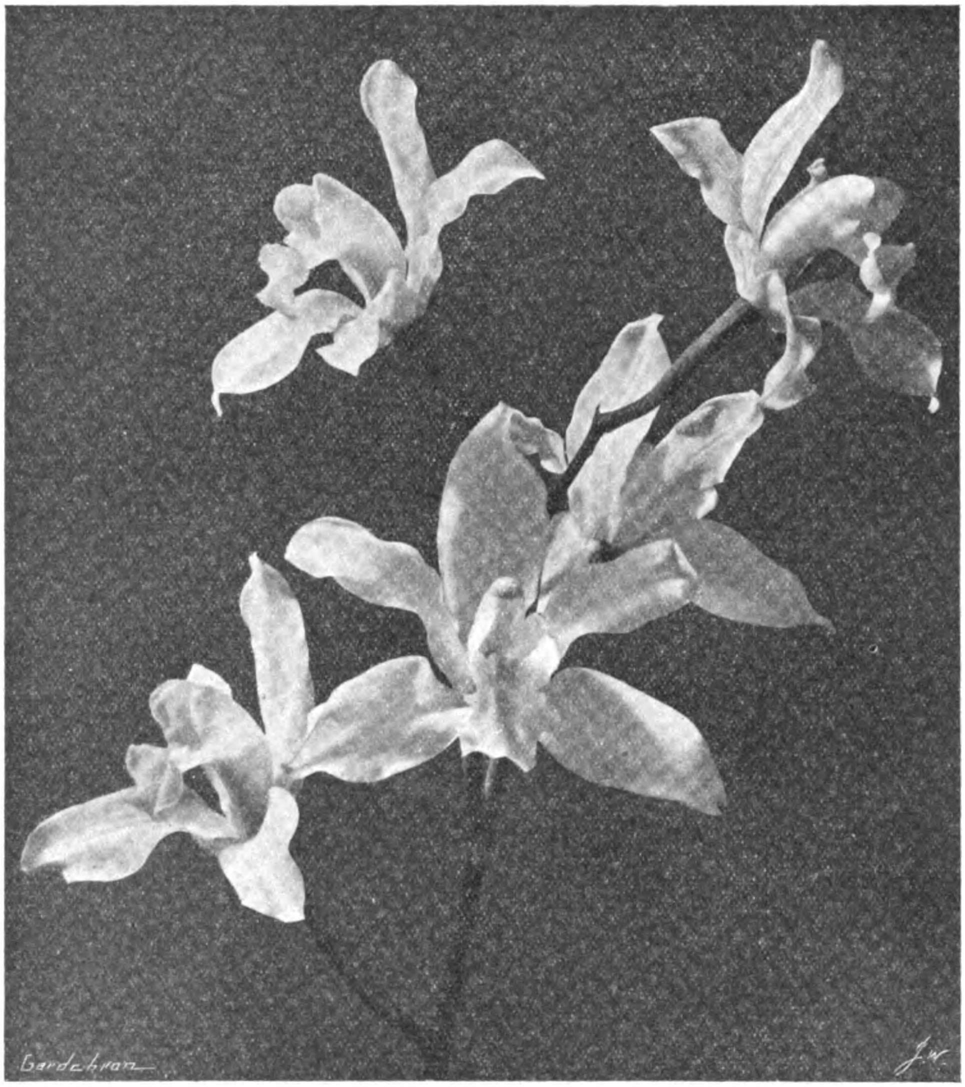

FIG. 116.—CYMBIDIUM ALEXANDERI VAR. ALBENS AT ORCHIDVALE, BEVERLY, MASS., U.S.A. (see p. 285).

PLANTS NEW OR NOTEWORTHY.

RHODODENDRON WILSONAE.

This is an evergreen species of loose-habited growth, two feet or more in height, with slender, smooth stems that are not strong enough to remain upright. This Rhododendron is so distinct that I cannot compare it to any other I have seen in flower.

I first became acquainted with this deliciously sweet-scented Rhododendron two years ago, when two sprays of it were sent to me. When the box containing them was opened, the fragrance was as if the box had previously been used for perfumery.

R. Wilsonae is considered tender, but I imagine that it will not suffer from inclement weather in spring as many other Rhododendrons; so far this season, a specimen, only moderately sheltered, is unharmed by frost.

Mr. E. H. Wilson discovered it in Hupeh in 1908. Four to six leaves of a firm texture develop at the ends of straight branchlets in false verticillate fashion; the leaves are narrowly oval to lanceolate, three inches long by one inch broad; glabrous, reticulate above, and pale green on the under surface. The flowers are usually solitary, but occasionally two emerge from the long, pointed buds of dark brown scales. The corolla is shallow, funnel-shaped, three inches or so across, and consists of very deeply-cut lobes of a lovely soft pink colour, with a few greenish-brown markings in the throat. As already stated, the flower has a rich perfume. There are seven to ten stamens; these and the pistil appear to be smooth; the five-chambered ovary is cylindric.

Wrens damage the flowers, evidently in pursuit of nectar, and beetles gnaw the lowest leaves.

By reason of its loose habit of growth the plant lends itself to layering; rooted layers are ready to sever within twelve months, which is an indication that the plant might also be propagated from cuttings.

I do not know if this Rhododendron naturally increases by sucker-like growths, but it seems to have that possibility. The best position in which to plant it would be where it overhangs a projection or on a rugged slope. *C. F. C.*

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THE GARDEN IN ANTIQUITY

V.—THE HANGING GARDENS OF BABYLON.

I COME now to speak of those far-famed gardens which were at one time reckoned among the wonders of the the ancient world. They have been described as one of the few truly poetic creations of the age, and as being poetical alike in their nature and in the circumstances from which they arose. And, on the other hand, they have been spoken of as a monstrous invention. But before dealing with the particular gardens which became so famous in history, we must try and learn something of the earlier history of the craft. We gather that this kind of garden was known in Assyria as early as the days of Sennacherib, being introduced into Babylonia at a comparatively late date. Although often described by historians, Layard seems to have the honour of being the first to bring to light the actual remains of these strange devices; or the original representations of the same, still found on the monuments of antiquity. Thus, at Kouyunjik, he discovered a temple in connection with the north palace, occupying the top of a mound covered with trees of two different kinds and watered by artificial streams. On the right is the picture of a hanging garden which has been raised to the level of the temple by means of masonry supported on an arcade, the arches of which are of the pointed type and not rounded. The trees are conventional, but seem to me to represent the Palm and the Pomegranate. It has been suggested (says Rawlinson) that the Assyrians applied the two kinds of arches to different purposes, the pointed being used for underground work where there was great pressure, and the round above ground. But "this ingenious theory is scarcely borne out by the facts. The pointed arch is used above ground for the aqueduct and hanging garden, where the pressure, though considerable, would not have been extraordinary."

Readers of Xenophon will recall the great Cyaxares, with whom the even greater Cyrus was so intimately associated as a youth. He was the father of Amytis, who was wedded to Nebuchadnezzar, King of Babylon. The usually accepted story is that when the Median princess reached her new home she pined for the mountains of her native land with their verdant bowers and cooling shade. "Whereupon her royal lord, with a chivalrous gallantry that would have done honour to a far later time, ordered the construction of an artificial hill disposed in terraces which, being covered with a layer of earth, were planted with the handsomest trees, amidst which on the topmost terrace a villa-like residence was erected for the queen, where she could enjoy, not only purer air and pleasant shades, but a vast and beautiful prospect. If this pretty legend be true—and why should we deny ourselves the pleasure of believing it, since there is nothing to disprove it—the woman so loved might well feel compensated for the loss of her native scenery."

From the early Greek and Roman authors we learn that the terraces were supported by pillars and pointed arches, all of which were made of bricks, either dried in the sun or baked in kilns and cemented together or laid in bitumen. Layers of lead also were placed between the masonry and the soil to prevent the water used in irrigation from percolating into the joints. The terraces are said to have been four in number, and the remains which have been examined confirm the statement that the pillars were twenty feet in circumference and sixty feet apart. The Greek writers use for these gardens the name *Paradeisos* or Paradise, a word which they borrowed from the Persians. Long before the days of Nebuchadnezzar, however, they were figured on the walls of Assyrian palaces in the sculptures which came to light during the nineteenth century, and they seem to have originated in remote ages in Chaldaea, whence the idea spread to other capitals. It would seem that they were connected with the religious traditions of the Holy Mountain and the Sacred Tree.

It has to be admitted that we are here in the region of myth and legend: fact and fancy being about equally divided. That hanging gardens, so-called, really existed in very ancient times cannot be doubted since they are constantly mentioned by reliable historians, besides being represented in art. But who originated them, and for what purpose, it is now impossible to say. We have them put to the credit of the mythical Queen Semiramis, for example, who is said to have built numerous cities, among which was "the city of Babylon with all its wonders. She constructed the hanging gardens in Media, of which later writers give us such strange accounts." Although attributed by others to Nebuchadnezzar, there is no reference to them in any of his inscriptions thus far brought to light, and it is very doubtful, in spite of the statements of Ctesias and others, whether this monarch really erected them. From Layard, George Smith, Rawlinson, and others we learn that such artificial works were not uncommon in the East, and it is possible that they were originally due to the initiative of some great Assyrian monarch.

"In the palace of Asurbanipal, at Kouyunjik, which was discovered and excavated by Rassam, was a room, the bas-reliefs of which were devoted to scenes illustrating that King's Babylonian war, one of which shows a garden laid out on a slope, and continued above on a structure of vaulted brickwork, an arrangement fairly in accord with the description of the Babylonian hanging gardens given by Diodorus and Pliny; and it is noteworthy that the latter (whose *Natural History* should be consulted in this connection) attributes them to a Syrian (Assyrian) king who reigned at Babylon, and built them to gratify a wife whom he greatly loved. This bas-relief was regarded by Sir Henry Rawlinson and George Smith as representing the hanging gardens at Babylon, and a neighbouring sculpture, which shows a series of fortified walls, as well as a palace, probably represents the walls of the city as they were in the time of Asarbanipal."

What the plants were which the royal gardeners planted in these gardens we gather in part from the sculptures themselves, and in part from the inscriptions. The Date Palm was introduced at a very early period from Arabia, and like the Vine, was represented as the Tree of Life, or one of the sacred trees. The Fig tree, also introduced from abroad, was freely cultivated, as was the Pomegranate and one or more of the Citrons. In tanks and artificial pools the favourite Lotus was carefully tended, and other Liliaceous plants, such as Nymphaeas, Nelumbiums and Liliums were found either in the tanks or on the terraces. The allusions of Horace and other Roman poets to Persia and Babylonia lead to the inference that the Romans and Greeks were indebted to a great extent to the East for their love of flowers and the use they made of garlands in their temples and at their festivals and entertainments; all of which goes to confirm the statement that the Assyrians, Babylonians, and Persians were already famous for their garden-craft.

Among their highly-prized plants was the Basil (Ocimum), of which much has been written since it was described upwards of a century ago in the *Asiatic Researches* founded by Sir W. Jones. Under the name of Tulsi or Tulasi it is constantly mentioned by writers on Oriental plant-lore and kindred subjects. Another plant with which these early gardeners were undoubtedly familiar was the Cyclamen, one form of which, as the name Persian Cyclamen implies, comes from the East. The Hyacinth, which Hafiz and other poets liken to the tresses of their heroines, may be added. The Iris also, was pretty certainly known; but here our list must close. *Hilderic Friend.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

GARRULITY is a privilege, if not the prerogative, of elderly amateurs. If a gossip is at hand we chatter endlessly about our plants; if there is none within earshot, we crave the hospitality of the press.

Surely Mr. Clarence Druce errs in stating (page 241) that Daphne Mezereum and D. Laureola do not usually flower simultaneously. In the woods here both species have been in flower since the last week of January. D. Laureola springs freely self-sown; but D. Mezereum is esteemed palatable by rabbits, and has to be shielded by wire netting.

No colour in the flower border at this season (April) attracts more admiration than the soft, but scintillating, hue of Tulipa Kaufmanniana "Brilliant." This remarkable variety looks as though the pale yellow perianth of the typical flower had received a rich wash of rose madder, the result being a luminous tint which I do not know exactly matched in any other flower, the brilliancy being much enhanced by a cluster of large, rich yellow anthers. When planted near the yellow-flowered form the result is a very agreeable contrast of colour, which is much enhanced by the proximity of Muscari conicum "Heavenly Blue." T. Kaufmanniana has one quality—that of comparative permanence—which distinguishes it from most of the Asiatic Tulips whereof I have any experience. These soon die out if left in the open border; but Kaufmann's Tulip, though it may not increase from offsets, comes up regularly to lead the van of the genus.

A pretty kind of Comfrey has formed a broad mat here behind a label inscribed Symphytum tuberosum, but I cannot identify it with that native species, which is described by Bentham and Hooker as having cymes small and few-flowered and not branching whereas, the stem of our plant branches, and the cymes consist of twelve to fifteen flowers. Moreover, in Weathers's *Bulb Book* S. tuberosum is described as growing one foot to two feet high, and producing "yellowish, drooping, tubular flowers in June and July"; whereas our plant is never more than six inches high, flowers continuously from January to April, and these flowers are bright scarlet in bud, opening to sulphur colour, each segment of the corolla being tipped with carmine. I know not whence or when this herb came here, but it is quite desirable, having none of the rampant propensity of the common Comfrey.

It would be well that more general use should be made of the Spring Snowflake—Leucojum vernum—which one seldom sees except in the flower garden, and not very often there. It never looks so well as when planted in drifts in woodland, where, if the soil is to its fancy, it increases rapidly both by seeds and offsets. Wherever the common Snowdrop flourishes and spreads (and that is not everywhere) the Spring Snowflake makes itself at home; but the two should not be planted in mixture, their resemblance to each other producing an unpleasing jar. The variety Vagneri, bearing two or three flowers on a stem, coincides exactly in time of flowering with the Snowdrop; but L. vernum and its variety carpaticum are later, and are at their best when the Snowdrops are passing away.

The persistence of blossom in Narcissus cyclamineus is very remarkable. Earliest of Daffodils, it opened its first flower here on January 18. I marked that flower, which endured every vicissitude of wind, rain, snow, and frost, nor was it until April 6 that the corolla showed the first symptom of fading, having remained unblemished for eleven weeks.

Last year there was a discussion in *The Gardeners' Chronicle* about the propagation of the common Snowdrop—Galanthus nivalis—doubt being expressed by some of your correspondents whether it spread self-sown or only by offsets. All such doubt may be resolved by inspection of such places as are favourable to the increase of this plant, where it will be evident that not only have the carpels swollen and contain seeds, but that since the flowers have faded the stems have lengthened, many of them being over a foot long, whereby the carpels are enabled to discharge their seeds well clear of the parent bulbs, colonising fresh ground.

Culzean Castle, the Marquess of Ailsa's seat in South Ayrshire, stands on the crest of a sea-cliff, on the precipitous face of which may be seen clumps of Snowdrops, where the hands of man can never have planted them, and where they can only have arrived by seed. *Herbert Maxwell, Monreith.*

ORCHID NOTES AND GLEANINGS.

AN EXPERIMENT WITH CYMBIDIUMS.

In the United States, as in Europe, Cymbidiums are usually grown in pots on benches, about three feet from the floor, and the water pipes heating the house are located either near the floor under the benches or under the walks between the benches. In either case the pots and roots are nearer the heat supply than the leaves, and therefore as warm or warmer than the leaves and flower spikes.

I have had some doubts as to whether or not this is the best method of cultivating such ground Orchids. Cymbidiums are not epiphytal, that is, they do not grow on trees. They are terrestrial, that is, they live in the earth, out of which they get most of their food. Sometimes they are found growing in decayed matter on rocks and in crutches of trees, but they require earth in which to grow.

Cymbidiums occur largely in the far East and mostly in India. They grow in the shade of trees in countries like Burma, where the air is hot, but where, in the shade, the earth is necessarily cooler than the air. It is evident, therefore, that the circulation of air is not around the roots, but higher up, around the leaves and flower spikes. Why, then, grow these plants with hot air circulating around the roots at the bottom and cooler air at the top, around the leaves? Our experiment reverses this method. We grow the plants cool and provide warmer air for the tops than for the roots.

Briefly described, the house runs north and south and has a length inside of 67 feet and is 17 feet 4 inches wide (see Fig. 117). The walls on the sides and ends are concrete, 2 feet 7½ inches high on the inside above the floor, and the side glass from the wall to the roof is 2 feet 3 inches. From the floor to the ridge is 9 feet. The walls are 2 feet wide, covered with cast-iron gratings. The centre bed is 5 feet wide and the side beds 3 feet. The length of the centre bed is 61 feet. This house contains approximately 500 Cymbidium plants of varying sizes and representing over one hundred varieties.

There is no bottom ventilation. Ample ventilation is given wholly by means of the movable ventilators on each side of the top of the roof. The house is shaded by small wood-slat blinds on each side of the roof, rolled down from the top and pulled up by cords.

The hot water for heating the house is carried in four rows of four-inch iron pipes underneath the glass roof, on each side of the house, the return pipes being under the iron gratings on the walks on each side.

Recently a group of 125 of these plants, in thirty-eight varieties, carrying over 200 spikes and more than 2,000 flowers, was exhibited at the spring show of the Massachusetts Horticultural Society at Horticultural Hall, Boston.

In the cultivation of these Cymbidiums the house is kept fairly cool, with much circulation of air at the top. Cymbidiums require good drainage and here this is provided by having the pots containing the Cymbidiums placed on beds of large pieces of porous coke, eighteen inches deep. The coke is drenched with water as required, and the slow evaporation of this water supplies the air with the necessary moisture.

Our Cymbidiums have been in this house only a few months, not being put there until after the flower spikes had started, therefore it is as yet too soon to determine whether or not the experiment will be a success. Although the leaves are of a dark-green colour and seem very happy, and the sturdy stems carry many large flowers, nevertheless the results of the experiment cannot be fairly determined until a second flowering season comes, a year hence. *Albert C. Burrage, Orchidvale, Beverly Farms, Mass., U.S.A.*

[Mr. Albert C. Burrage, one of the most enthusiastic Orchid growers in the United States, is President of the Massachusetts Horticultural Society. His experiment, as described above, will be watched with considerable interest, and we hope he will be good enough to write us again, a year hence, and state the results.—Eds.]

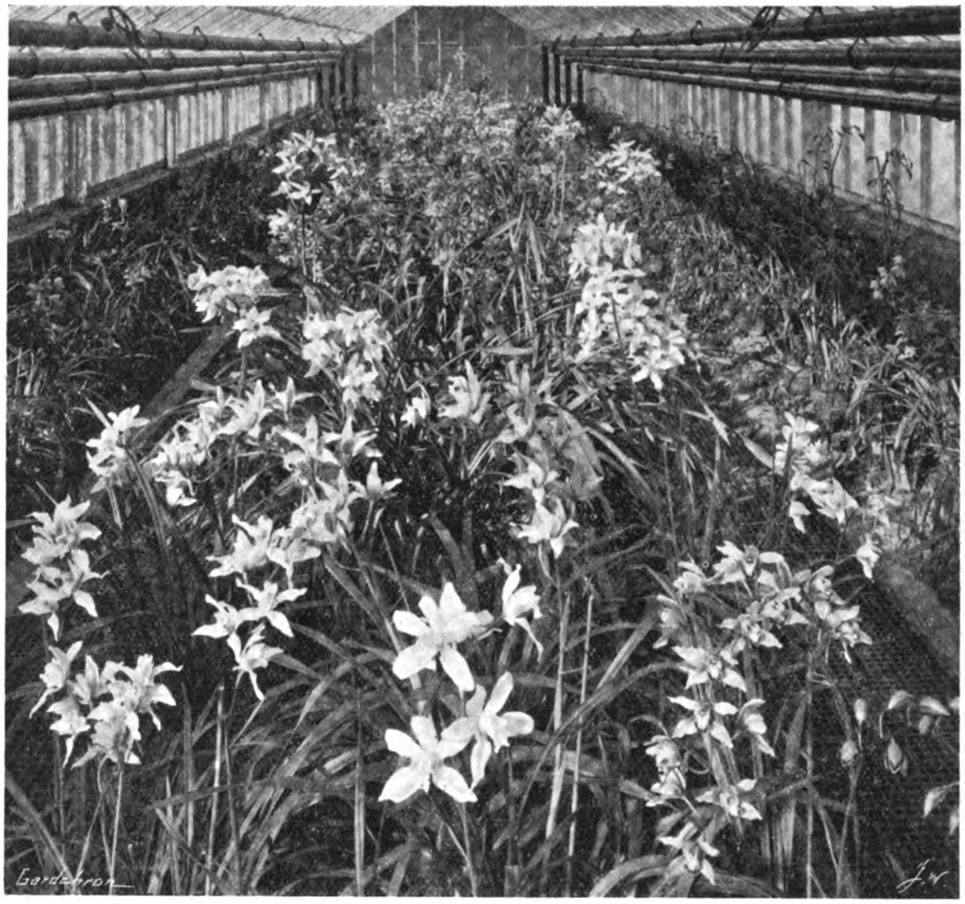

FIG. 117.—CYMBIDIUMS GROWING ON THE GROUND LEVEL AT ORCHIDVALE, BEVERLY, MASS., U.S.A.

NOTICES OF BOOKS.

The Romance of the Fungus World.*

The authors of this account of the life and work of Fungi have had the courage to write simply of things which are generally left to the learned to describe in language of scientific obscurity. There are many books on Fungi written by the expert for experts and of them not a few are excellent, but there are few which give accurately and simply the strange and interesting facts about this remarkable group of plants. Yet there must be a large number of people who would like to know something about the Toadstools and other Fungi which are so widespread that every rotting tree trunk or sodden fence rail is covered with them. Here in this volume the curious may learn what the unsophisticated and the sophisticated think about fairy rings. Shakespeare was very clear about their origin and the dependence of Mushrooms in general on supernatural creation . . . .

"You demy-puppets, that
By moonshine do the green sour ringlets make,
Whereof the ewe not bites; and you, whose pastime
Is to make midnight Mushrooms."

The learned on the other hand trace the fairy ring to the migration of a fungus and ascribe the rankness of the outer grass and the blasted appearance of the grass within the ring to the toxic action of the fungus. So we may take our choice of explanations. Yet those who converted by science can no longer entertain the superstitions which older races perhaps believed and certainly enjoyed, may find ample exercise of wonder in the authors' account of the actual life of Fungi, their variety of form and the strange relationships which have been established between Fungi and other plants. On the roots of all manner of forest trees are Fungi to be found. There are the mycorrhiza—fungus mantles that cover the roots and somehow or other help the trees to live in places which might otherwise be inhospitable to them. Then, of course, there are the Lichens, those marvellous examples of plant partnership; fungus and alga living together and by the mere fact of their association able to live in situations wher neither might thrive alone. The fungus-alga partners of Lichens break down rock and make from it the beginning of soil; without them and their pioneer work the world, for all we know, might never have achieved the fertility which it enjoys. From these pages the curious reader may learn all kinds of fungus-lore and so pleasantly is the knowledge imparted that it cannot fail to whet the reader's appetite for more. If of a practical turn of mind the reader may discover how large a part Fungi play in country legends; if prosaic he may learn how at Corsham, Wiltshire, hundreds of tons of one fungus—the common Mushroom are raised daily in disused quarries lit by electric light, with galleries connected with picking stations by telephone, and Mushroom beds extending over nearly thirty acres. Or he may, in imagination, go Truffle hunting under the expert guidance of the authors or learn how the Japanese carry on the Shii-take industry by cultivating Mushrooms on the pulped logs of the Shii-tree, Quercus cuspidata, or other Oaks. And so by the time he reaches the end of the volume the reader may be by no means disinclined to join the ranks of those who make the study of Fungi a hobby, and if so, as we understand it, the ultimate object of the authors will be achieved. They learned their fungus lore from one of the great masters of the craft, the late George Massee, and fired by his enthusiasm they do well to hand it on to others and to strive—as we think effectually—to quicken the love for all nature's handwork in the minds of their disciples.

HARDY FLOWER BORDER.

THE HOLLYHOCK.

Good cultivation is necessary to produce robust, healthy plants of Hollyhocks. Formerly named varieties were propagated by grafting, division, and from cuttings, and these were especially liable to attacks of the disease caused by the fungus Puccinia malvacearum. Seedlings grown on clean ground are not so susceptible to the disease, and this method is now chiefly followed by growers. Formerly the double varieties were propagated by grafting, which was done both in autumn and spring, whenever suitable scions were available. Large numbers of seedling Hollyhocks were raised to provide roots from which suitable stocks were selected. Whip or splice grafting was favoured and great care taken to perform the work quickly, as if the parts were allowed to become dry, failure resulted. The grafted stocks were placed in small pots and then plunged in propagating cases in which a gentle bottom heat was maintained until the union was complete.

The cuttings were made about three inches long with a piece of the old root-stock attached. They were planted singly in small pots filled with light, sandy soil. If taken during the autumn they were placed in cold frames, shaded, and kept moist until they were rooted. During the winter the cuttings were grown with gentle bottom heat.

If raised from seeds sown on prepared beds in May, the transplanted seedlings will be ready for placing in their permanent positions during the following May. In cold, wet localities, and on heavy land, it is advisable to sow the seeds in boxes or on a prepared bed under a frame.

The Hollyhock is a rapid grower and builds up a large amount of vegetable tissue in a few weeks. A deep, rich soil, and abundant moisture at the roots are essential details of successful cultivation. A space of four feet from plant to plant should be allowed; overcrowding prevents the healthy development of the foliage. Fine spikes covered with large flowers are obtained by removing all the side shoots. Strong stakes must be provided and the plants carefully secured to them as they develop. A mulch of half-rotted manure is beneficial and copious supplies of clear water are required during the plant's rapid development. Weak liquid manure from the farm-yard applied twice weekly when the flower buds begin to show is an excellent stimulant.

The flower buds may be thinned; those left give fine blooms which will also show to the best advantage. Crowded flowers on the spikes are of shorter duration, especially during wet weather. Flowers produced on the extreme tips of the spikes are seldom good and if the latter are allowed to develop the plant undergoes an unnecessary strain in producing them.

Although the Hollyhock is generally treated as a biennial the plant may be grown on for several seasons if desired. On light land in the southern counties Hollyhocks will survive the winter in the open, provided protection of Bracken Fern or other light litter is afforded them during severe weather. On heavy loam, or clay, the risk is too great and the plants should be placed in pots and given the protection of a cold frame.

Single Hollyhocks grow well and flower profusely under ordinary conditions. They seed very freely and self-sown plants are sometimes seen growing in the most unlikely places. They are well worthy of a place in gardens.

Clean cultivation will help considerably in keeping the disease in check. The same rust attacks Malvaceous weeds and often the Musk Mallow (Malva moschata) is affected by it. Remedies are difficult to apply effectually owing to the fact that the disease is seated within the tissues of the plant, but it may be kept in check by spraying the plants frequently with a suitable fungicide. *C. Ruse, The Hyde Gardens, Near Luton.*

PYRETHRUMS.

The perennial Pyrethrum in both its single and double forms is a most valuable border plant and useful for supplying cut flowers, which last for a long time.

The wide range of colours in both the single and double varieties is sufficiently large to please the most fastidious. They also withstand variations of weather, their flowers being unharmed by either the sun's rays or heavy rains.

If the first flowers are cut away as soon as they are faded the plants will flower again in the autumn.

Pyrethrums will succeed in any good, ordinary, stiffish garden soil, but to grow them well it is necessary to plant them in rich loam mixed with well-rotted manure, and in well-trenched, freely drained soil, with an abundance of water when in the bud

NEW HYBRID ORCHIDS.

(*Continued from March* 14, *p.* 182.)

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Warnham Beauty	B.-C. Digbyano-Mossiae × C. Tityus	C. J. Lucas, Esq.
Cattleya Capitol	Trianae ignea × Syros	Sanders.
Cattleya Edith	Mossiae × Jupiter	J. & A. McBean.
Cattleya Hermann Sielken	C. G. Roebling × Dupreana	P. Bauer, Baden.
Cattleya Jupitus	Edith × Tityus	J. & A. McBean.
Cymbidium Phyllis	Alexanderi × J. Davis	Sanders.
Cymbidium Tityus	Woodhamsianum × Alexanderi	Armstrong & Brown.
Cymbidium Zebra	Dryad × insigne Sander	Sanders.
Cypripedium Aureoma	aureum × Desdemona	P. Smith, Esq.
Cypripedium Bandemona	Bantam × Desdemona	P. Smith, Esq.
Cypripedium Gundo	Carola × villosum	P. Smith, Esq.
Cypripedium Opal	Moonstone × Sanacderae, Cookson's variety	C. Cookson, Esq.
Dendrobium Griselda A. Fox	nobile nobilius × Florence E. King	F. J. Hanbury, Esq.
Dendrobium Kennobile	Kenneth × nobile delicatum	F. J. Hanbury, Esq.
Dendrobium Mary J. S. Hanbury	chessingtonense × Melpomene	F. J. Hanbury, Esq.
Dendrobium Matthewsianum	nobile elegans × xanthocentrum	F. J. Hanbury, Esq.
Odontioda Viscountess Folkestone	Oda. Coronation × Odm. l'Empereur	R. Gerrish, Esq.
Odontoglossum Clodagh	Lakiniae × Nathaniel	R. Gerrish, Esq.
Odontoglossum Falstaff	Portia × eximillus	Flory & Black.
Odontoglossum Marida	Mars × Ida	J. & A. McBean.
Odontoglossum Megan	King Arthur × illustrissimum	J. & A. McBean.
Odontoglossum Omar	Princess Mary × Sambo	J. & A. McBean.
Odontoglossum Vuylgroganiae	Vuylstekeae × Groganiae	J. & A. McBean.
Sophro-Laelio-Cattleya Heatherwood	L.-C. Serbia × S.-L.-C. Joseph Charlesworth	Flory & Black.
Sophro-Laelio-Cattleya Vulcan	L.-C. Dominiana × S.-L.-C. Anzac	Flory & Black.

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* *The Romance of the Fungus World.* An account of fungus life in its numerous guises, both real and legendary. By R. T. Rolfe and F. W. Rolfe. London, Chapman and Hall, 1925. Price 12s. 6d.

stage and during times of drought. It is also well to cover the crowns in early spring with coal ashes to prevent attack of slugs.

Pyrethrums may be planted during the early autumn, but the better time to transplant is from the middle to the end of April, when the roots are active. They may be propagated from seeds, cuttings, and by division.

There are large numbers of varieties, of which the following sorts will be found to be unequalled. Single-flowered:—Albert Victor, crimson; A. M. Kelway, rose-pink; Beauty of Stapleford, rich rose; Comet, glowing crimson; Countess of Leitrim, delicate rosy-Peach shade; Edward VII, rosy-carmine; Elsie Gertrude, pink; General French, velvety-crimson; Lady Knaresborough, soft blush; Langport Scarlet, very brilliant; May Robinson, a large, handsome flower of clear pink colour; Oxeye, scarlet, with a conspicuous white centre; and Princess Marie, pure white.

Double-flowered varieties:—Aphrodite, Mont Blanc, and Samranburg, all pure white; La Vestale, delicate blush; Lord Rosebery, crimson-scarlet; Paul Journu, rose-pink; Queen Mary, large, handsome, full, double flowers of a delicate rose colour; and Vance, a pretty cream tipped shade with pink. *W. Logan.*

DIMORPHOTHECA.

Dimorphotheca aurantiaca, or Star of the Veldt, as it is popularly known, is fast becoming one of the most popular of our summer bedding plants; it produces its orange-coloured flowers in great profusion, the display continuing until quite late in the autumn.

The cultivation of this Dimorphotheca is very simple. Seeds should be sown in pans or boxes early in April in light, sandy soil, and placed in a cool house. When the seedlings are large enough to handle, prick them off into cold frames in a light, rich compost, at two inches apart. Seeds may also be sown in the open ground early in May.

In some districts excellent results are obtained by raising the plants in the open, but this system of cultivation is not always successful, and many prefer the former method. The plant is a native of South Africa, and needs a warm, sunny position and a light, rich soil. It does well in dry borders facing south, close to a wall, also on sloping ground and in dry places in the rock garden.

This Dimorphotheca grows to a height of from twelve to fifteen inches. The flowers close in the evening, which reduces their value for table decoration.

However, it is well worthy of a place in every garden, and the rich, orange shade, especially when the sun is at its hottest, gives the flowers a dazzling appearance, and never fails to give pleasure. Hybrids have been raised having flowers of various colours, including Apricot, buff and salmon, whilst some of them have delicately tinted white flowers.

It is now quite a common practice to grow annuals in pots for conservatory decoration, and this Dimorphotheca lends itself admirably to this method of culture. It is more effective to grow several plants in a pot than one only.

If a few seeds are sown direct in a forty-eight-sized pot and the seedlings thinned to four, the plants will flower a little earlier than if transplanted from the seed-pans, as they will not receive a check.

Use a light, rich compost mixed with sharp sand, and grow the plants in a cold frame. As they begin to develop they will require some light support; small Birch twigs are very suitable for the purpose.

The flowers will be greatly improved in size and brilliance by watering the roots on frequent occasions with weak liquid manure. *J. A. Kirkwood.*

ALPINE GARDEN.

HEPATICAS.

WITH reference to Sir Herbert Maxwell's note on the failure of Hepaticas at Monreith (p. 129), I may state that these charming, spring-flowering plants grew with great freedom and flowered profusely in a garden in Ireland. The soil in which they had been planted consisted of loam and peat, and the bed was well drained. The finest plants grew at the foot of an old wall in a partially shaded position.

H. angulosa, with its large, clear blue flowers, is perhaps the most popular, and this Hepatica does not appear to be fastidious as to soil. It has been noted growing in an Essex garden where the soil consisted of stiff clay. A rose-coloured form of the above is also excellent. The white Hepatica proved to be of delicate constitution and did not flower freely, the few flowers produced being of poor quality. *C. Ruse.*

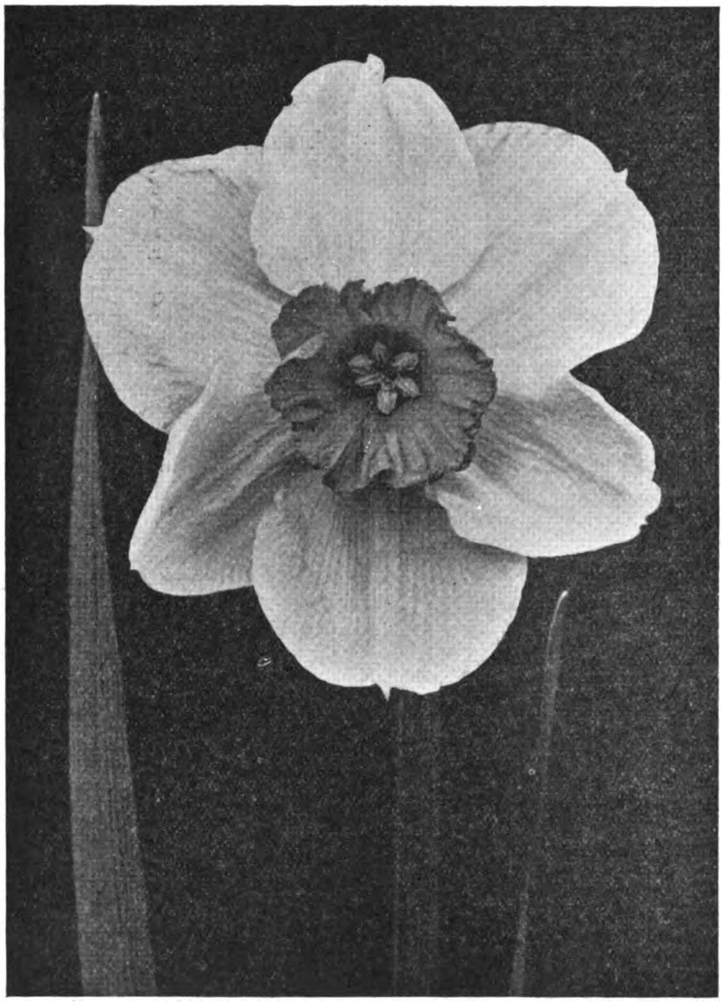

FIG. 118.—NARCISSUS LADY DIANA MANNERS

R.H.S. Award of Merit, April 15. A beautiful variety with broad, white perianth, and rich orange-scarlet crown (see p. 274).

DIANTHUS GRANITICUS.

SOME years since I made the acquaintance of Dianthus graniticus, and I have liked it so much that I was surprised to read the semi-depreciatory way in which the late Mr. Reginald Farrer wrote of it in *The English Rock Garden*. He classes it with D. hirtus and D. Requienii, and informs us that neither of these are very attractive, but gives D. graniticus faint praise by saying it is "the best of the forms, and sometimes its blossoms make a fine effect like those of D. deltoides, by virtue of their masses in summer."

As I have seen and cultivated this Dianthus I have come to regard it as an excellent rock plant when not restricted to a limited space, but allowed to grow in masses, when it is superior to D. deltoides, not only in size of flower but in freedom of bloom. It is not a "lime-lover," as, indeed, we might gather from its specific name, but it does not appear to be a "lime-hater" either, a comfort to those in limestone districts. It is taller than D. deltoides, and varies a little in size of flower when raised from seeds, but is wonderfully constant from these in colour, the only real exception known being a white variety, after the fashion of D. deltoides albus, with the pretty zonation which is such a pleasing feature of the albino variety of the Maiden Pink. The other plants are of a warm, pink colour. Some slight differences in shade may be met with in these, but not sufficient, so far as I have seen, to justify the application of a varietal title. Some day, probably we may be in possession of a more brilliant, large-flowered Granite Pink, but meanwhile we can enjoy a mass of its bright flowers. This is easily secured by raising plants from a packet of seeds, sown, preferably, under glass, and the seedlings pricked out so soon as they can be handled and planted out when of sufficient size.

I prefer to grow the plant in poor, gritty soil and a sunny place, but I have found that D. graniticus does quite well in semi-shaded positions, although in these it lacks the brilliancy it displays in sun. I have plants of the white variety in batches of seedlings. *S. Arnott.*

HARDY FERNS.

Where hardy Ferns are grown, either in beds, rockwork, or in corners by themselves, they should receive attention at this season. The dead fronds may now be removed and any necessary lifting and replanting carried out.

Plantations which need no replanting should have the surface soil lightly pricked over and receive a top-dressing of good compost, in which leaf-mould or other decayed vegetable matter predominates.

A shady bank is a good position for an outdoor Fernery, and admits of treatment by the aid of a few boulders and stones. In such a position moisture is derived from the higher soil at the back during periods of dry weather, and the plants are less liable to suffer than those planted on the flat.

Such strong-growing Ferns as Polystichum, Lastrea, and Athyrium require a good depth of soil, whereas the smaller-growing Hart's Tongues, Polypodium, and Rue Fern thrive in a minium of soil. All appreciate atmospheric moisture, however, and in periods of dry weather frequent overhead sprayings will do much to keep the plants healthy and vigorous. *W. Auton.*

PUBLIC PARKS AND GARDENS.

Greenock Corporation and the War Memorial Committee propose to carry out various improvements at the Well Park, at a total estimated cost of £3,500.

The Urban District Council of Hoole has been authorised to proceed with the construction of six hard tennis courts in Alexandra Park.

The Swansea Parks Committee is considering a proposal to procure two or three of the Goitre Fawr small holdings for a recreation ground for Killay and Dunvant. The area comprises some twenty-and-a-half acres.

With respect to the proposal to purchase the Gunnersbury estate as a public park, the Town Council of Acton has resolved to make application to the Ministry of Labour for sanction to borrow £45,342, the amount of Acton's share of the purchase money.

Warrenpoint Urban District Council has been authorised to acquire lands for a recreation ground, and it is proposed to build a shelter therein.

A scheme is on foot to acquire Streatham Grove Park, an area of some thirty acres in extent practically adjoining Streatham Common. By the acquisition of two other spaces, one known as the Rookery, which has already been purchased, and the other consisting of two fields having an area of five-and-a-quarter acres, Streatham Grove will be linked up with Streatham Common, which has an area of sixty-six acres, and was generously presented to the public by the Ecclesiastical Commissioners in 1884. The Rookery has been laid out with great care and taste, and includes lawns, rock garden, and old-world flower gardens. Streatham Grove consists of undulating meadows, containing clumps of fine timber trees flanked by ornamental shrubberies. The cost of the estate is £16,000, and already £9,000 has been promised towards the purchase money. The final decision to purchase the land must be made in six weeks' time, and efforts are being made to raise the necessary amount; the Croydon Council has voted £2,000 towards the scheme and it is understood that the London County Council will be recommended by its appropriate committee to make a substantial contribution.

APPLE LEAF SCORCH.

Recent notes in this journal on leaf scorch of Apple trees have greatly interested me and I hope the subject will be further discussed. There is no doubt of the seriousness of the trouble, and it is very prevalent. If the many gardeners who must have experienced it would only relate all they could tell about it much valuable information would result.

It was in August, 1922, that I wrote a note to a contemporary which I hoped would provoke correspondence on this subject. No response being forthcoming, I wrote again in September, 1922, and made there a suggestion that there may be a connection between leaf scorch and die-back. To this journal, in March of 1924, I contributed some notes on leaf scorch and suggested starvation as the primary cause, giving the result of some experiments I made in my efforts to combat it. I showed how manure, particularly organic manure, benefited the trees. This treatment was continued, with the result that in 1924 the trees were notable for freedom from scorch, although we have it on the authority of *Market Grower* that it was particularly bad during that year. As I was not favoured by the weather, and was working on what had been a very bad scorch area, I can only conclude that my treatment—the provision of organic manure—is proving effective. My trees, I now consider, are over the trouble.

No comment was ever made upon my suggestion of a connection between leaf scorch and die-back. I note, however, that at Long Ashton the decision has been arrived at that die-back is not caused by any disease, but is of physiological origin. It, in this respect therefore, is similar to scorch, and there does seem to me a probability that the cause of scorch if intensified will give die-back. My experience of the two is as follows:—1920, no scorch; 1921, bad scorch but no die-back; 1922, commenced with die-back in the spring, which I think may be due to the bad scorch experienced in 1921.

In 1922 manuring commenced and a continuous diminution of scorch followed. There was no further sign of die-back. As *Market Grower* informs us that scorch is prevalent at East Malling on trees generously manured, clearly starvation is not the only cause, although my own experience would lead me to suspect this unless otherwise informed. I may say that although I have given my trees all the manure I could get, the dressings can hardly be described as generous. It had always to be given with a thought as to which trees were in slightly better condition and could thus be given a trifle less. Here, again, scorch resembles die-back. It occurs on trees under-manured and on those generously manured; on trees in badly drained land, and in over-dry land.

I had a good deal of experience of die-back in the tropics, on Rubber and Coffee. A mycologist, from laboratory investigation, named a specific fungus as the cause. I disputed this as I found the trouble was in every case traceable to outside causes. Some of these were boggy land, shallow soil, over-cropping of Coffee and over-tapping of Rubber. Further investigations in the field by the expert caused him to agree that the fungus was not the causative agent, but starvation.

A very decided epidemic of die-back of Oak trees has developed in the last few years. This, in the opinion of many observers, is traceable to the injury done year after year by the plague of caterpillars which defoliate them. This, again, is really starvation of the tree by the removal of its food manufactories, and scorch, by its interference with healthy leaf action could bring about the intense starvation which may cause the tree to die back.

If die-back can be shown to be due to scorch' or if manuring, in most cases, cures one or both, the grower will have a load of worry taken off his mind. Are there other instances, besides the one quoted by *Market Grower*, of well manured trees developing scorch? *E. Brown, Hillside, Doddington, Sittingbourne.*

Market Grower has kindly sent me a correction of a misprint in his letter published on p. 242, in which "no nutrient solution" should read "no potash in the nutrient solution," a point with which I dealt in the second paragraph of my article. He can, of course, place himself in any company he pleases, however mixed it may be. So far the records of the Long Ashton pot trials do not seem to have been subjected to analysis; perhaps, since the value of an experiment depends upon the validity of the control experiments, and since no controls are recorded, there is little to analyse.

My quotations support the contention that no evidence is forthcoming that the potash effect is clear when the plain, rain-water fed examples are considered. May I also quote the passage from Messrs. Hatton and Grubb's article. "If one takes into account the nutritional aspect of Leaf scorch, and the potash factor recently brought to light by Mr. Wallace of Long Ashton, the high percentage of potash shown by most analyses of the ash of Apples is extremely significant. Gourley, in his *Textbook of Pomology*, states that 'the ash of Apple averages over one half of potash, not unlike the other fruits: however, the analysis shows rather more variation from ash than has usually been noticed in the fruits in general.'" A rather similar statement is made by Gardner, etc., in the *Fundamentals of Fruit Production*. Taken as a whole, perhaps a gentle intimation that all is not well with the potash standpoint. But it is surely not merely a question of fruit alone; the needs of root, wood, young wood, leaves, etc. require attention as well .

Where is the deficiency in the potash-starved tree, is it in leaf or young wood, and where are records of analyses of scorched and unscorched trees to be found? Are these not of prime importance to a potash theory? Roberts[*] gives Apples: — Fruit 0·8–1·9, Young tree, branches 0·4, roots 0·9, trunks 0·6 parts per thousand. Pears:—Fruit 0·8–1·8, Young tree, branches 0·8, roots 1·1, trunks 1·3 parts per thousand.

This suggests the conclusion that the Pear has greater potash needs than the Apple, though the fruits scale much the same.

Turning again to Messrs. Hatton and Grubb,[†] we find the total potash of East Malling soil averaged 0·2951, the available 0·024; that is the available is practically five-fold Dyer's efficiency limit, yet a most serious outbreak of leaf scorch occurred. Evidently if potash is a determining factor, we shall have to amend our ideas on the needful "available" limits. The potash in the Long Ashton pot trials was exhibited as sulphate; it is generally believed that when potassium sulphate is added to the soil it is probably not absorbed as such, but becomes converted to carbonate, or further perhaps to humic compounds ere it is absorbed; such changes, as also zeolith conversions, have had little chance of occurring in these trials.

In the numerous feeding trials that are being made in connexion with vitamins, a criterion is the restoration to health of the diseased animal when the wanting factor is exhibited; a similar criterion is desirable in plant-feeding trials. The potash factor in leaf scorch must remain *incertae sedis* until some stringent trials have been devised and carried out. Meanwhile, one would shrink from advising expenditure on costly potash manuring. *H. E. Durham.*

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[*] *Fertility of the Land*, New York, 1911.

[†] *Journal of Pomology*, iv. p. 76.

HARDY FRUIT GARDEN.

PROSPECTS OF THE HARDY FRUIT CROPS.

With the exception of Apricots and possibly Pears, the former apparently having suffered more through the unusual length, rather than the severity of the winter, there is promise of good average crops of hardy fruits. So far as one is able to judge at present, the outlook is very encouraging, and good crops are more probable from the fact that the present spring is a fairly late one. A mild winter following a wet, cold summer, led growers to fear a very early development of the flower buds, but February and March were colder and the blossoming has been retarded.

In my immediate neighbourhood the only comparative failures seem to be Apricots and Pears, there being very little promise of bloom on either of these fruit trees. Apricots are the worst, and their failure may probably be set down to the cold and sunless summer of 1924. Apricots in this locality have produced thin and irregular blossoms, but be the crops heavy or light, or a complete failure, pinching and disbudding must not be neglected. As grubs will soon put in an appearance, all curled or folded leaves should be pinched to destroy the grubs, or removed as they appear.

In some cases, Pears promise to yield about half the average crop, and if this results in the individual fruits being of superior size, this is almost better than a full crop. Peaches, Nectarines, and Plums, are showing well for fruiting; the trees, moreover, are remarkably clean and free from Aphides. Disbudding will soon be the most important operation calling for attention on wall trees of Peaches and Apricots.

Disbudding should not be commenced until the fruit is large enough to push off the remains of the decaying flower, and then the operation should be commenced, continued, and ended when the weather is mild and favourable to a free and rapid flow of the sap. The shoots on the upper parts of the most vigorous trees claim attention first, then the lower parts should be disbudded, and last of all, trees that have been root-pruned, transplanted, or which from other causes show signs of weakness. By deferring the removal of the shoots and leaves, weak, but otherwise healthy, trees gain rapidly in strength, whilst others inclined to a gross habit may be kept in subjection by early disbudding and pinching.

Plums, except where the buds have been cleared off by birds, are very promising. The prospects for a good yield of Apples are all that could be desired, and, given a favourable season, these trees are likely to furnish satisfactory crops. Growers whose trees suffered badly from maggots last season will be anxious about the crop this year, but so far as plenty of blossom buds can ensure a full crop, that is already attained. It is somewhat early to gauge with any certainty, whether bush fruits will furnish full crops, but the outlook is promising. Raspberries promise well in length and strength of cane, though the buds seem thinner than usual; Currants and Gooseberries have a full average show of bloom.

Strawberries vary greatly in appearance, some plants having suffered much, others little, and some not at all. Those of the younger plantations, as was notably the case here last year, have wintered best. The foliage of Strawberries in old plantations has suffered severely since the new year, especially where the plants are fully exposed, but with genial weather we shall probably have something like an average yield of berries. Frequent dressings of soot and lime applied at this season will prove most useful as a deterrent to slugs, that are so destructive during June. After several applications of soot and lime, a clean surfacing of litter on which the ripe fruits may rest, should be applied.

The annual battle with aphides is close at hand: I do not mean to say that the grower's efforts should cease at any period, but I refer more particularly to the insect in its active state. I would impress on all fruit growers, and especially amateurs, the importance of adopting preventive measures against aphides, or else attacking them on their first appearance, instead of waiting until they have obtained a firm footing. A mixture of soft soap and Quassia extract is a safe insecticide and makes an excellent wash for syringing Plum trees and any other fruit trees affected with this troublesome pest. *F. Jordan, Ford Manor Gardens, Lingfield, Surrey.*

FRUIT REGISTER.

NECTARINE CARDINAL.

Raised by Messrs. T. Rivers and Son, of Sawbridgeworth, upwards of thirty years ago, this variety is of such outstanding merit for its earliness and good forcing qualities, that it should be included in every collection of Nectarines grown under glass. It is one of the most constant croppers, rarely failing to produce a full crop of fruits, which ripen ten to twelve days earlier than those of Early Rivers. The tree is of moderate vigour and has rather thin foliage. It carries a handsome, large flower and is an exceptionally free setting variety.

The one serious fault of Cardinal Nectarine is the liability of the fruits to crack just after the stoning period is over. But this may be easily overcome by refraining from syringing from the stoning period until the fruits are gathered: an additional precaution is to thin less severely until the danger is past. I have never found red spider so troublesome as might be expected, having regard to the drier conditions and the thin leaves.

The fruits are of medium size and brilliantly coloured on all parts exposed to the sun. The flavour is good, and although not up to the standard of some of the later varieties, it is appreciated because Cardinal gives the first fruits of the season. Careful gathering is essential, because even when ripe it is difficult to separate the fruits from the tree. This is probably an advantage, as in many varieties a certain number of fruits are spoiled by dropping, even when constant attention is paid to gathering. *J. Wilson, Wisley.*

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

Carnation Baroness de Brienen.—Being aware that the practice is open to criticism, I am pleased to give my reasons for thinning out the young shoots of Carnation Baroness de Brienen (see page 242). This variety is of very dense habit, and the usual "stopping" is followed by the production of a number of crowded shoots. At this stage the growth of the plant is somewhat slow and the reasons for thinning out some of the weaker shoots are two-fold. Firstly, to encourage growth, and secondly, to facilitate clean culture. Red spider is very liable to become established in crowded shoots and is most difficult to eradicate. I have heard of some growers who have given up growing Baroness de Brienen owing to repeated attacks of red spider. It is not necessary to grow on the plants for two or three seasons to obtain large specimens, but where space can be afforded, these older plants are most useful for supplying flowers on long, stiff stems. *C. Ruse, The Hyde Gardens, near Luton.*

SOCIETIES.

ROYAL HORTICULTURAL.

April 21 and 22.—The exhibition on these dates was a particularly fine one and well attended. The Hall at Vincent Square was well filled with exhibits, and the bright colouring of Daffodils, Polyanthuses, Carnations, flowering trees and shrubs, and the gorgeous hues of the great central group of Tulips combined to produce a very attractive display. Novelties were rather numerous, and among the several medals recommended there were no fewer than three gold ones.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), and Messrs. Gurney Wilson (Hon. Sec.), R. Brooman White, C. J. Lucas, W. H. Smith, H. T. Pitt, S. W. Flory, F. K. Sander, H. G. Alexander, J. E. Shill, John Cypher, Charles H. Curtis, W. H. Hatcher, A. McBean, T. Armstrong, and R. G. Thwaites.

FIRST-CLASS CERTIFICATE.

Odontioda Orestes var. Butterfly (*Odontioda Coronation × Odontoglossum percultum*).—A beautiful hybrid with seventeen large and shapely blooms. The ground colour is rich deep red, with white or pink markings and deeper margins. The lip is white, with red markings around the handsome golden yellow disc. Shown by J. J. Bolton, Esq. (gr. Mr. Lyne), Claygate Lodge, Claygate.

AWARDS OF MERIT.

Cattleya Schröderae var. Hercules.—A beautiful form of a lovely and fragrant old species. It has broad segments and a deep mauve and yellow shading in the lip. Shown by Messrs. Stuart Low and Co.

Laelio-Cattleya Orange Blossom var. magnifica (*L.-C. Elinor × L.-C. Trimyra*).—A glorious Orchid with splendid flowers of a rich light orange-yellow colour throughout. The petals and lip have frilled margins. The plant shown carried a spike of five blooms. Shown by Sir George Holford (gr. Mr. H. Alexander), Westonbirt, Tetbury.

GROUPS.

Messrs. Stuart Low and Co. contributed a pleasing display, but did not pay much attention to the ground work or setting of this exhibit. In the centre they had several capital plants of Laelio-Cattleya G. S. Ball, with sixteen of its rich orange-coloured flowers; Dendrobium densiflorum, D. thyrsiflorum, and D. Brymerianum were prominent, as also were Cattleya Schröderae var. Hercules—very fine—and in the foreground we noted the quaint Cirrhopetalum cornutum and the lovely little Sophronitis grandiflora. (Bronze Banksian Medal).

Baron B. Schröder (gr. Mr. Shill), The Dell Park, Egham, exhibited superbly grown Dendrobiums, including lovely flowers of D. Model and some seedlings from it, also two splendid specimens of D. Thwaitesiae, smothered with yellow flowers, one carrying fifty-five blooms.

Messrs. Cowan showed a grand flower of Brasso-Cattleya Apollo, Odontoglossum eximillus, and Miltonia Bleuana.

Odontioda Orestes var. Butterfly, with seventeen lovely flowers on a fine spike, was shown by J. J. Bolton, Esq. (gr. Mr. Lyne), who also exhibited Odontoglossum Exworth, with intense dark chocolate flowers. Messrs. Flory and Black sent two handsome plants, one of Cattleya Prince Shimadzu and one of Laelio-Cattleya Montrose of fine form and colour.

Messrs. Charlesworth and Co., Haywards Heath, put up a small group in the Orchid annexe, but although it was not an extensive exhibit, it contained splendidly grown and finely-flowered specimens of this firm's specialities in Odontoglossums, Odontiodas and Laelio-Cattleyas All the plants represented high culture and their arrangement was very pleasing (Silver Banksian Medal).

Floral Committee.

Section A.—*Present:* Messrs. H. B. May (in the Chair), Arthur Turner, Donald Allan, Hugh Dickson, M. C. Allwood, E. R. Janes, J. B. Riding, F. Streeter, F. G. Cousins, D. Ingamells, D. B. Crane, W. B. Gingell, Chas. E. Pearson, J. F. McLeod and W. D. Cartwright (Sec.).

Section B.—*Present:* Mr. Chas. T. Musgrave (in the Chair), Sir Wm. Lawrence and Messrs. W. J. Bean, G. W. Loder, G. Reuthe, Geo. Harrow, W. B. Cranfield, Reginald Cory, A. Bedford, T. Hay, F. G. Preston, E. H. Wilding, G. Yeld, Clarence Elliott, E. A. Bowles and H. T. McLaren.

FIRST-CLASS CERTIFICATE.

Prunus Sargentii.—This lovely pink-flowered species was introduced from Japan by Prof. Sargent in 1893. The plant is free-flowering, of good habit, and the newly-opening leaves are bronze-tinted. Shown by the Hon. VICARY GIBBS (gr. Mr. E. Beckett), Aldenham.

AWARDS OF MERIT.

Rose Roselandia.—A beautiful Rose with long, handsome buds, and flowers made up of very broad petals. The colour is clear yellow. The long stems, good form, and substance suggest that this variety may become popular for market cultivation. Shown by Mr. WALTER STEVENS, Hoddesdon.

Hippeastrum Black Beauty.—This is a fine form, and the colour is intense dark, shiny crimson.

Hippeastrum Iceberg.—A lovely pure white variety of superb form and fine size. There is a little green shading in the centre.

Hippeastrum Pink Blossom—Another grandly formed flower, indeed, all the segments are very broad and overlapping. The colour is brilliant cerise-pink, with green centre and a white band on the lower part of the inner segments. These three Hippeastrums were raised and shown by Sir GEORGE HOLFORD (gr. Mr. Clark), Westonbirt, Tetbury.

Rhododendron sphaeranthum.—This is one of Mr. F. Kingdon Ward's finds (K.W. 3998) and is unlike the usual type of Rhododendron. The narrowly linear-lanceolate leaves are green above and whitish beneath in the young state. The small, slightly-fragrant flowers, less than a half inch across, are blush coloured and borne in close terminal heads, suggesting a Pimelea or a small Kalmia. Shown by the MARQUIS OF HEADFORT (gr. Mr. W. E. Trevithick), Headfort, Kells, Co. Meath.

Gladiolus Mackinderi.—A distinct species of tall growth and very early flowering. The upper part of the stems are purplish and the bracts purplish-brown. The flowers are bright orange-salmon. The plants are from Kenya Colony and brought home by Sir J. Ramsden. Shown by Sir J. RAMSDEN (gr. Mr. G. Taylor), Bulstrode Park, Bucks.

Iris Wattii.—A strong growing Iris of the I. japonica type. It is evidently a very strong grower, as one stem and spike was over four feet tall. The flowers are flat, white, with a yellow crest on each of the falls. Shown by Mr. W. H. WALTERS, Colesborne Gardens, Gloucestershire.

Rhododendron Elsae.—A splendid hybrid between R. grande and R. Falconeri. In general appearance it greatly resembles the latter parent. The big leaves are shining green above and fawn coloured beneath. The big bell shaped flowers are white, semi-transparent, with a purple stain in the base; the trusses are of huge size and carry about twenty flowers. Shown by Mr. G. REUTHE.

Rhododendron Muriel.—Another superb hybrid of the Falconeri type with big bells carried on long stems in huge trusses. The big leaves are dull green above and lightly rufous beneath. In general colour the flowers closely resemble those of R. Falconeri, but they are broader and have longer pedicels. The raiser is unknown. Shown by Lady LODER, Leonardslee, Horsham.

Rhododendron Garnet.—A handsome Javanico-jasminiflorum hybrid. A very fine specimen was shown, carrying about a score of trusses of blood-red flowers. This is a greenhouse plant. Shown by Sir GEORGE HOLFORD.

Stachyurus praecox.—This is a somewhat dwarf Japanese shrub which bears its small, pale yellow flowers in racemes during the early months of the year. In mild seasons it may begin to flower so early as February. It is deciduous and blooms while leafless, the flowers being borne on the drooping racemes, set about an inch apart on the reddish stems. From ten to twenty flowers are carried on each raceme. A very pretty, hardy, early-flowering shrub.

Stachyurus chinensis.—This is the Chinese representative of S. praecox. It is of stronger and less elegant growth, and its flowers are of duller appearance than those of the Japanese species.

Berberis stenophylla var. coccinea.—An effective garden variety, with semi-double flowers, which are orange-coloured on the outside and yellow within. The three foregoing plants were shown by the Hon. VICARY GIBBS (gr. Mr. E. Beckett), Aldenham House, Elstree.

GROUPS.

A fascinating collection, largely of alpine plants, was exhibited by the Hon. VICARY GIBBS (gr. Mr. E. Beckett), Aldenham House, Elstree. To relieve what might otherwise have been the flatness of the lowly rock garden plants there were several delightful mounds of deciduous Azaleas. The chief sorts were Azalea Yodogawa, Double Mauve, of considerable elegance and charm, and Azalea amoena varieties. The principal alpines were Saxifraga Letchworth Beauty, S. Dr. Ramsey, S. Aldenham Pink; Primula rosea grandiflora, P. Forrestii, P. marginata, P. chionantha and a magnificent pair of P. denticulata. Besides these there were goodly examples of Bellis sylvestris, Daphne neapolitana and various Anemones (Gold Medal).

On the opposite side of the entrance Messrs. J. CHEAL AND SONS had a graceful group of flowering shrubs. Pyruses of the Malus floribunda type were freely shown and these included graceful sprays of P. spectabilis Kaido and P. floribunda purpurea, Prunus Hisakura, Cydonia Maulei, Magnolia conspicua, M. stellata and a heavily berried plant of Aucuba japonica vera were also of considerable interest (Silver-gilt Banksian Medal).

Japanese Cherries of great charm were shown by Messrs. HILLIER AND SONS. Prunus serrulata Sekiyama (P. Hisakura) and P. Sirotar (P. Mount Fuji) were represented by several particularly grand bushes. The true Ceanothus rigidus and Lomatia ferruginea were also worthy of admiration (Silver Banksian Medal),

In a group near the gallery Messrs. L. R. RUSSELL, LTD., exhibited several varieties of Wistaria, Azalea Hinodegiri, a variety of Clematis, and the uncommon Strelitzia regina (Silver Banksian Medal). Hydrangeas in good varieties, Pyruses, the fragrant Staphylea colchica and Lilacs were attractively staged by Messrs. R. AND G. CUTHBERT (Silver Banksian Medal).

Large numbers of excellent cut sprays of Rhododendrons were arranged by Messrs. R. GILL AND SON. R. Ernest Gill, R. arboreum album, R. Ivorianum and R. Teysmannianum were especially prominent. The Norfolk Island Forget-me-not (Myosotidium nobile) and many St. Brigid Anemones were also shown by this firm. (Silver Banksian Medal). Mr. G. REUTHE also showed an interesting variety of early flowering Rhododendrons, and amongst many alpines were included Cyclamen repandum, Shortias, Sanguinaria canadensis, Calypso borealis and Anemone fulgens (Silver Banksian Medal).

Amongst a particularly interesting alpine plant collection Mr. CLARENCE ELLIOTT included several valuable Auriculas and allied plants. The principal varieties were Primula Mrs. Wilson, P. pubescens Ladybird and P. Zuleika Dobson. The pretty little white-eyed Gentiana verna was splendidly shown, as also were Saxifraga Greisbachii Wisley var., S. Riverslea, Petrocallis pyrenaica and Viola Bluestone (Silver-gilt Banksian Medal).

Daphne rupestris grandiflora, Saxifraga Gusmusii, S. palmata and Cytisus Ardoinii were prominent in a group arranged by Messrs. R. TUCKER AND SONS (Silver Banksian Medal). Anemone apennina, Armeria caespitosa and Iris azurea were noted in the collection of Messrs. W. H. ROGERS AND SON (Silver Banksian Medal).

In an exhibit attractively arranged by Mr. F. G. WOOD there were two ideal bushes of Daphne Cneorum, Muscari paradoxa, Fritillaria pyrenaica and various Primulas (Silver Banksian Medal). Red Daisies, mostly Ball of Fire, made brilliant colouring in the collection of Messrs. B. LADHAMS, LTD. The delicate pink variety Alice and the deep rose-pink Shirley also attracted attention, while amongst their Primulas were Oxlips and Giant Cowslips (Bronze Banksian Medal).

A well-arranged, low rockery was contributed by Messrs. CARTER PAGE AND CO., who planted it with such appropriate plants as Saxifraga Pompadour, Cyclamen repandum, Primula rosea, the dwarf-spreading Helichrysum bellidioides and Primula farinosa. They also showed admirable Violas (Silver Banksian Medal).

With a background of Azalea indica varieties, Messrs. WATERER, SONS AND CRISP showed Aubrietia rosea splendens, Ranunculus amplexicaule, Shortia uniflora, Saxifraga bathoniensis and other alpines (Silver Banksian Medal). The tiny Rubus arcticus bearing rosy-purple flowers was shown by Mr. M. PRICHARD, who also showed Gentiana acaulis, Aethionema Warley and other alpines.

Messrs. MAXWELL AND BEALE had a pretty little rock-garden which was appropriately planted with seasonable subjects (Bronze Banksian Medal). Primula Wanda and P. secundiflora were included in an exhibit by Messrs. BAKERS, LTD.

In addition to their Polyantha Roses Messrs. W. CUTBUSH AND SON showed Rhododendron Alice, Brooms, Kalmias and alpines (Bronze Banksian Medal).

Mr. W. H. WALTERS, Colesborne Gardens, Cheltenham, had an especially interesting collection of uncommon hardy plants. Amongst others he showed Euphorbia sikkimensis, which has vivid scarlet stems and mid-ribs to the leaves; Fritillaria acmopetala, F. contorta alba, Moraea spathacea, Speirantha convallarioides and the old favourite greenhouse climber Cantua buxifolia (C. dependens) bearing exceptionally large flowers (Silver Banksian Medal).

Several exhibitors contributed particularly good strains of Polyanthus. Messrs. BLACKMORE AND LANGDON showed, in large baskets, masses of plants that were particularly rich in orange and maroon shades of colour, while the sturdy trusses bore plenty of large flowers (Silver Banksian Medal). The yellow shades predominated in the plants shown by Mr. G. A. MILLER, and these also were admirable. Amongst other things he included lovely masses of Muscari Heavenly Blue (Bronze Banksian Medal). Messrs A. J. CROOKS had a smaller but choice collection of Polyanthuses.

Mr. JAMES DOUGLAS brought a collection of his well-known show and alpine Auriculas (Bronze Banksian Medal).

In addition to their Carnations and Roses, Messrs. STUART LOW AND CO. set up an admirable collection of profusely flowered Mimosas. These included Acacia spiralis, A. cordata, and A. armata. They also showed

Camellias, Azalea indica varieties, Calla Elliotiana, and Boronia heterophylla (Silver Banksian Medal).

Roses were not quite so numerous as a fortnight ago; no doubt the chief blooms are being held for the Spring Show of the National Rose Society. Messrs. B. R. **Cant and Sons** again showed their splendid novelties Mrs. Beatty and Lady Wakefield, as well as such older sorts as Covent Garden, Sovereign, and Phoebe (Silver Banksian Medal). Messrs. **Wm. Cutbush and Son** included very good plants of Polyantha varieties in their miscellaneous exhibit, and the Rev. J. H. **Pemberton** had a small group of the dwarf Polyantha Roses, of which Echo, Jessie, Rudolph Kluis, rich pink, and Eblouissant, deep crimson, are all highly decorative (Bronze Banksian Medal).

As is nearly always usual Carnations were well represented. Messrs. **Stuart Low and Co.** included large vases of Arnos Grove, Lady Hindlip, and the vivid pink Hugh Low (Bronze Banksian Medal).

Chief amongst the varieties staged by Messrs. **Allwood Bros.** were the new Master Michael Stoop, Edward Allwood, of vivid scarlet colouring, Wivelsfield Claret, and White Enchantress (Silver Banksian Medal). Several large vases of Carnations raised from seeds showed what excellent blooms may be obtained in that manner.

Mr. C. **Engelmann** also staged an excellent collection of named varieties (Bronze Banksian Medal).

The **Duchess of Wellington** (gr. Mr. H. Buckingham), Elmhurst Park, Basingstoke, showed a number of very good spikes of Hymerocallis (Ismene) Calathinum, an exceedingly fragrant, white-flowered greenhouse Lily, introduced from Brazil in 1796.

Adjoining their magnificent collection of Narcissus, Messrs. **Barr and Sons** displayed a very interesting set of dwarf Irises. All the little plants were only a few inches high, but they bore quite large flowers which showed an interesting variation of colours and all were of great garden value. The principal sorts were Iris pumila coerulea and the variety alba, I. elegance, and I. obliensis Socrates.

Messrs. **Sutton and Sons** staged half-a-dozen plants, each of Echium plantagineum and E. creticum. Unfortunately, the Echium travels badly, and some of the flowers had fallen, but sufficient remained to illustrate the uncommon colouring and interest of these hardy annuals. E. plantagineum (syn. E. violaceum) is a native of the Mediterranean, and the tall, hairy plants bear rich purplish-violet flowers. E. creticum is a dwarfer species, is about two feet high and bears reddish-violet flowers.

Narcissus and Tulip Committee.

Present: Mr. E. A. Bowles (in the chair), Miss E. Willmott, Rev. J. Jacob, and Messrs. Geo. Monro, Charles H. Curtis, W. B. Cranfield, J. de Graaff, P. R. Barr, F. Borchard, J. W. Jones, W. Poupart, W. F. M. Copeland, and Robt. W. Ascroft (Secretary).

First-Class Certificate.

Narcissus Mary Copeland.—This handsome double variety is now fairly well known and several years ago it received an Award of Merit. It now receives the higher award. The perianth and other large segments are cream coloured, and the small petaloid segments are of a rich, deep orange colour. Shown and raised by Mr. W. F. M. **Copeland**, Shirley, Southampton.

Groups.

Messrs. **Sutton and Sons** exhibited a very imposing collection of Tulips arranged as an oval floor group. It was very skilfully designed, with the flowers raised higher at the two ends so that the bed sunk in an undulating manner towards the centre. The plants were arranged so that the flowers were all of the same height, and the whole presented a very pleasing design in panels of different colours. The centres of the two higher portions were crowned by golden varieties, in one case Avis Kennicott, with a circle of the slaty-blue Rev. Ewbank around it, and in the other case, the yellow fungens lutea surrounded by the deep claret variety Bacchus; the yellow variety Ellen Willmott was used as a centre piece. Of the other sorts, which represented a selection of the best Tulips in cultivation, special mention may be made of Bartigon, Bacchus, Ambrosia, Pride of Netherlands, Panorama, which has an uncommon bronzy-crimson shade; Jupiter, Carrara, one of the best of white Tulips; King Harold, crimson; Clara Butt, and Zomerschoon, a most striking variety of rosy-pink colour with white stripes (Gold Medal.)

Mr. W. F. N. **Copeland**, West View, Shirley, Southampton, showed some intersting Daffodils of his raising, several of them under numbers. He had several forms of the pretty Triandrus type, which is a very dainty flower for decorations in dwelling rooms. Of these his No. 948 is a much whiter bloom than Copeland's Triandrus, which is now well known. The group also contained many interesting double Daffodils, including Iphigenia, raised from Albatross; Inez, which has received the R.H.S. Award of Merit; Lady Swettenham, in which the inner, dwarfer segments are a beautiful canary colour, and Silver Rose. A seedling Barrii, No. 136, is a very pretty bloom, having segments of regular outline and a brilliant brick-red, flattish corona. (Silver Banksian Medal).

It is not often that a firm receives a Gold Medal on two successive occasions for exhibits of the same flower, but this honour fell to Messrs. **Barr and Sons**, who again had a magnificent collection of Daffodils; as a fortnight ago. Seedlings were of special merit, and these were principally Barrii varieties with exceptionally broad and vividly coloured coronas. Amongst the named Barrii blooms were Syrian Prince, which has a wide fiery orange margin to the yellow corona; Lusette, Adonia, and Marie Louise. The Poeticus varieties included Cylgad, Snow King, Socrates, and Arclight. Chief amongst some excellent Incomparabilis varieties was Mrs. R. O. Backhouse, which has an almost transparent perianth and a large, pinkish tube. (Gold Medal).

Seedlings, also of considerable merit were shown by Messrs. **R. H. Bath, Ltd.**, while among their named varieties were Bath's Flame, Stella, Tidd Pratt, Red Guard, a lovely Barrii of orange sheen; Sulphur King, Dawson City, and Buxted, three good yellow Trumpets, and Red Robe, Barrii. (Silver-gilt Banksian Medal.)

In the annexe, Mr. J. W. **Barr** had two interesting groups. Besides extra good seedlings he showed Red Gauntlet, Blazing Star, Merry Dick, Jaspar, and Sunbeam, brilliant Barrii varieties, and Mrs. R. Backhouse, Loveliness, and Drusilla, a trio of drooping Trumpets of chaste appearance. (Silver Banksian Medal.)

A tastefully-arranged collection of Tulips was set up by the **Maytham Gardens**. In addition to many useful Darwin varieties, they showed vases of Tulipa retroflexa and T. Sirène, a lovely pink companion flower.

Fruit and Vegetable Committee.

Present; Messrs. C. J. Nix (in the chair), J. Cheal, W. Poupart, Geo. F. Tinley, H. S. Rivers, S. B. Dicks, W. Giles, A. Bullock, E. Neal, G. Woodward, W. H. Divers, E. A. Bunyard, A. N. Rawes, F. Jordan, and E. Beckett.

Mr. **George Woodward**, Barham Court Gardens, Teston, Maidstone, Kent, showed fruits of Pear Doyenné Georges Boucher, a variety sometimes described as the South African "Comice." Mr. Woodward stated that his object in bringing the fruits before the Committee was to show how impossible it is to ripen them satisfactorily in this country. The only specimen that was anything like ripe was decayed at the stalk and Mr. Woodward said this was a common defect in his fruits. In his opinion the variety required a very hot season for the fruits to finish properly, but that it might be suitable for growing under glass, and he was inclined to believe that if it was stored in a little warmth it might also ripen. Mr. Woodward also showed Apple Optin d'Hiver, which was brought from France fifty-five years ago by the late Mr. Roger Leigh. The tree, although on the Paradise stock, was still cropping as abundantly as ever. It is a yellowish variety, flattish-round in shape, and said to be very good in the closing months of the year, but Mr. Woodward considered that there were superior sorts available then, and that this variety was not especially wanted.

Messrs. **Geo. Bunyard and Co., Ltd.**, in their exhibit of select varieties of hardy fruits in season, showed Pears Bellissime d'Hiver, Catillac, and Uvedale's St. Germain; also Apples Newton Wonder, Lord Burghley, Wagener, Christmas Pearmain, Bramley's Seedling, Ontario, Stark, Norman's Pippin, and Baumann's Red Winter Reinette.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, April 17.—*Committee present:* Capt. W. Horridge (in the chair), Messrs. R. Ashworth, A. Burns, J. Cypher, J. Evans, J. Lupton, and H. Arthur (Secretary).

First Class Certificate.

Odontoglossum Avoco West Point variety (eximium × King Manuel).—A well-shaped flower, beautifully marked and blotched with deep maroon; the petals are pleasingly fimbriated. From S. **Gratrix**, Esq.

Awards of Merit.

Cypripedium Wrigleyanum (Curtisii superbum × Gowerianum magnificum). From Mrs. **Bruce** and Miss **Wrigley**.

Odontoglossum crispum var. Lilac Time. From Mrs. **Gratrix**.

Groups.

S. **Gratrix**, Esq., West Point (gr. Mr. C. Branch), staged a group for which a Silver-Gilt Medal was awarded.

Mrs. **Bruce** and Miss **Wrigley**, Bury (gr. Mr. A. Burns), were awarded a Large Silver Medal for a group in variety.

A Silver Medal was also awarded to Messrs. **J. Cypher and Sons**, Cheltenham, for their exhibit of Orchids.

ROYAL CALEDONIAN HORTICULTURAL.

The ordinary monthly meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on the 7th inst., Mr. Robert Fife, president, in the chair.

A lecture entitled "Flower Notes of an Alpine Wanderer," illustrated by lantern slides, was delivered by Colonel E. Enever Todd, of York. Colonel Todd dealt more particularly with the Spanish Sierra Nevada, the Pyrenees, Corsica, and the Maritime, Swiss, North Italian, and Lower Austrian Alps, in his wanderings over which he had found over two thousand species of flowering plants, of which six hundred were of high merit for garden purposes. He stated that every now and then patches of flowers were encountered which were perfect rock gardens, and every one interested in alpines should study the plants in their natural habitats.

The exhibits were Cinerarias and Amaryllis from Messrs. **Dobbie and Co., Ltd.**, Edinburgh (awarded a Silver Medal); Hyacinths, from Mr. R. C. **Wilson**, Corstorphine (awarded a Cultural Certificate), and Rhododendrons from Corswall Gardens.

SPALDING BULB GROWERS' AND MARKET GARDENERS'.

The second annual flower show, organised by the Spalding and District Bulb Growers' and Market Gardeners' Association was held in the Spalding Corn Exchange on April 16th and 17th and was an unqualified success.

The show was declared open by Mr. W. G. Lobjoit, O.B.E., Controller of Horticulture, who struck an optimistic note when he declared that the Ministry is endeavouring to lead the American nation to see reason and not impose the embargo. The embargo, he declared, would not only injure this country by prohibiting exports to America, but there would be a grave danger of other countries sending their goods to be sold in England, because they could not send to America. That being so, the English market would have a double burden to bear, firstly, her own additional bulbs which could not be exported, and secondly, the produce sent from other countries.

He thought the mere fact of the Ministry being interested in bulb-growing and the production of flowers needed no apology. He reminded them that people were getting more and more educated and civilised, and as civilisation grew, so did the demand for flowers. People now looked upon flowers as a necessity for the home, and it was up to the Ministry to see that their demands were met in a reasonable way.

The demand for the flowers reaching their respective markets in the best condition possible led the committee to insert a special class to deal with this side of the growers' responsibility. Entrants to this special class had to pack a box of flowers which the secretary sent to London with instructions for the salesman to return them untouched. There was much difference of opinion as to what the state of the flowers would be when they again reached Spalding after the double train ride journey, but when the boxes were opened minds were set at rest, for the flowers were packed so well that hardly a bloom was crushed.

The show was the largest ever held in the South Lincolnshire District, and during the two days the exhibits were viewed by thousands of people. There were representatives from Scotland, and some from so far south as Penzance. One grower from Scotland expressed the opinion that the exhibition was one of the best he had seen.

The outstanding features of the show was the success which attended the efforts of Mr. R. Wellband, the pioneer of the local flower export industry. Mr. Wellband's first dealings with flowers were fifty years ago, when he advertised for wild Daffodils, and packed and sent them to market. His stand of new varieties—exhibited against the stand of Mr. Welchman who scored a success at the Royal Horticultural Society's Show, won the cup for the best collection of new varieties, and also the champion cup for the best exhibit in the show. All but two of the varieties were named, but it was around the two unnamed flowers that most of the interest centred. No. 101 was the better of the two. In shape and colour it resembles Red Cross, but upon closer examination it could easily be distinguished. The petals are firmer, standing with more erectness. The cup is more crimson and shone up beautifully against the pale, yellow perianth. Its near neighbour, No. 100, closely resembles it in some respects, but fails in the perianth, which is more starry. Other varieties shown by Mr. Wellband on this stand were the popular Croesus, Macebearer, Holland's Glory, Red Beacon, White Emblem, Golden Ray, Armadia, and Robert Sydenham; but the large, yellow head of Van Waveren's Giant stood out erect and proud above the other sorts.

Mr. E. W. Jacob, who secured the Gerald Da Costa Cup, also comes of an old family of bulb growers, his grandfather being a nurseryman long before the present Mr. Jacob's time. He had a fine lot of Daffodils on show, including Lux Mundi, Glory of Lisse, Bernardino, Seagull, Horace, Red Beacon, Spring Glory, Horsfieldii, White Lady, and Homespun; but the most outstanding flower was Treserve, which was the best of its name exhibited.

Fine specimens of Macebearer, Flame, White City, Croesus, and Kingdom won Mr. Wellband the first prize for short-cupped varieties, while a similar prize for Trumpet varieties was won with Golden Ray, Sassenheim, Treserve, Van Waveren's Giant, Frank Drake, and Rose Sydenham.

Messrs. O. W. D'Alcorn had their "B. 12m" out under the name of Whistler, the specimens on show measuring five-and-a-half-inches across. Its neighbour was the beautiful white Beersheba, which was offered at twelve guineas a bulb.

The champion flower of the show was an unnamed variety shown by Messrs. J. T. White and Son. This has pale, closely overlapping perianth segments, with a fine, short cup, tinged with crimson. No prize could be awarded as the raiser intends to hold the stock.

Obituary.

Arthur Warwick Sutton, V.M.H.—It is with the deepest regret we announce the death of Mr. Arthur Warwick Sutton, for some time senior partner in the firm of Messrs. Sutton and Sons, Reading; he died on the 15th inst., aged 71 years, at Bucklebury, Southbourne, Bournemouth, where he had lived for some years in retirement, having been compelled to exercise great care owing to heart trouble. For many years Mr. Sutton occupied a most prominent position in British horticulture and was a man of outstanding personality and many activities. His position in horticulture may be gauged by the fact that he was one of the sixty original distinguished horticulturists to receive the award of the Victoria Medal of Honour in Horticulture, and for some years he was a member of the Council of the Royal Horticultural Society. He was educated at Malvern College and the Royal Agricultural College, Cirencester, and joined the famous Reading seed firm in 1876. On the death of his brother, Mr. Martin John Sutton, in 1913, he became senior partner and the business of Messrs. Sutton and Sons was largely under his control during the difficult years of the war. He retired in 1921, as his heart affection became more and more troublesome. Mr. Sutton did much useful work for his country during the war years in respect of the National Food Supply. He leaves an honoured name in the Reading district where his kindness and many activities were displayed on every hand. He was especially interested in the Young Men's Christian Association and made gifts of premises in Friar Street, Reading, and Garrard House (home of the Junior Y.M.C.A.) and of the Fireside Club in Silver Street. He also instituted the Fireside Working Men's Club at Bucklebury. Mr. Sutton was keenly interested in the Holy land and he delivered lectures on Palestine, with special reference to the flora of that interesting country, before the Horticultural Club and other institutions. In the course of one of his tours he discovered and collected in Palestine seeds of a wild Pea. This he brought home and subsequently crossed with various types of our garden Pea. The Brassicas were another section of the vegetable kingdom which attracted his attention and in which he carried out numerous valuable experiments. On both of these subjects Mr. Sutton read papers before the Linnean Society. Mr. Sutton was also invited to read papers before the fourth International Conference of Genetics in Paris, the Royal Agricultural Society, the Farmers' Club and other scientific bodies; many of these lectures were subsequently printed. Everyone deeply regretted when, some few years ago, he was compelled to relinquish his horticultural and other activities, for he was a man that did much work that was useful and was ever ready both by his influence and his purse to help forward any good cause. He leaves a widow, an invalid son and two daughters to whom the deepest sympathy will be extended. The funeral took place at Reading Cemetery on Saturday, the 18th inst., and the large attendance of his many friends and citizens of Reading testified to the esteem in which this worthy gentleman was held. Among those who attended were Sir Francis Mordan Bryant, Prof. Bateson, of the John Innes Horticultural Institute; Mr. W. R. Dykes (representing the R.H.S.); The Mayor and Deputy-Mayor of Reading, all the Heads of Departments and the senior staff of the firm of Messrs. Sutton and Sons.

THE LATE MR. ARTHUR W. SUTTON, V.M.H.

James Begg.—We have received intimation of the death, at the ripe old age of ninety-three, of Mr. James Begg, Old Hall, Dinnet, Aberdeenshire. Born at Braeline, in the famous old Glen Tanar, he was in early manhood engaged by the late Sir William Cunliffe Brooks, Bt., as gardener at Glen Tanar, now the Scottish northern seat of Lord Glentanar, of the great thread mills, Paisley, where he remained for many years, giving splendid and much appreciated service. After Sir William's death, and when the late Lady Francis Cecil, a daughter of Sir William, took up residence at Fasnadarach, Mr. Begg was appointed gardener there. This post he relinquished sixteen years ago when in his seventy-seventh year, and he retired to Old Hall, where he spent a very pleasant eventide and enjoyed wonderfully good health up till about three months ago, when the heavy burden of years began to tell upon him. He and Mrs. Begg, by whom he is survived, celebrated their golden wedding in December, 1916. The funeral was attended by numerous friends of the deceased.

ANSWERS TO CORRESPONDENTS.

Names of Plants: *H. A. H.* 1, Thuya plicata; 2, Skimmia japonica; 3, Forsythia suspensa; 4, Thuya orientalis. *A. R.* Iris foetidissima (The Gladwyn). *A. S. P.* 1, Liriope striata; 2, Nephrolepsis exaltata variety; 3, Pieris floribunda. *L. G. W.* Phalaris arundinacea. *C. S. C.* 1, Marchantia polymorpha; 2, Azolla filiculoides.

Pelargonium Leaves: *L. G. W.* There is no fungous disease present on the Pelargonium leaves sent for examination. The trouble is probably a physiological one and the plants will doubtless grow out of it with the advent of warmer weather. Plenty of air should be admitted in the house on all favourable occasions.

Communications Received.—Panticus.—J. H. Y. A. T. H.—K. B.—E. M.—A. W. G.—H. M.—Horticus.—Fleet Pond.

MARKETS.

COVENT GARDEN, Tuesday, April 21st, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-13 0
—elegans	10 0-12 0
Aralia Sieboldii...	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-18 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	36 0-60 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Azaleas, per doz.	15 0-36 0
Cacti, per tray,	
—12's, 15's ...	5 0- 7 0
Cinerarias, doz.	15 0-24 0
Crotons, per doz.	30 0-45 0

	s. d. s. d.
Cyclamen—	
—32's	36 0-48 0
—48's	24 0-30 0
Cyrtomium ...	10 0-15 0
Erica melanthera, 48's per doz. ...	21 0-30 0
— —60's, per doz.	8 0-10 0
Marguerites, white, 48's per doz. ...	15 0-18 0
Nephrolepis, in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia ...	30 0-48 0
—60's	15 0-18 0
Pteris, in variety	10 0-15 0
—large 60's ...	5 0- 6 0
—small	4 0- 5 0
—72's, per tray of 15's	2 6- 3 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0-24 0
—cuneatum, per doz. bun. ...	12 0-15 0
Asparagus, plumosus, per bun.	
long trails, 6's	2 0- 3 0
med. sprays ...	1 6- 2 6
short „ ...	0 9- 1 3
—Sprengeri, per bun.	
long sprays ...	1 6- 2 0
med. „ ...	1 0- 1 6
short „ ...	0 4- 1 0
Azalea, white, per doz. bun. ...	9 0-10 0
Bouvardia, white, per doz. bun....	12 0-15 0
Camellias, White, per box ...	3 0- 3 6
Carnations, per doz. blooms ...	3 0- 4 6
Croton leaves, var., doz. leaves	0 9- 2 6
Daffodils—	
—Barrii, per doz.	2 6- 3 0
—Emperor, per doz. bun. ...	3 0- 4 0
—King Alfred, per doz. bun....	6 0- 8 0
—Sir Watkin, per doz. bun. ...	2 6- 3 0
Fern, French, per doz. bun. ...	0 9- 1 3
Freesia, white, per doz. bun.,	2 0- 3 0
Galax, American, green and bronze, per doz. bun....	— 3 0
Lilac, Dutch, per spikes	4 0- 8 0
Lilium speciosum rubrum, long, per doz. blooms	4 0- 5 0
—short „ „	3 0- 4 0
Lilium longiflorum long, per doz....	4 0- 5 0
Lily-of-the-Valley, per doz. bun. ...	24 0-36 0
Narcissus—	
—ornatus, per doz. bun. ...	2 6- 3 6
Orchids, per doz.	
—Cattleyas ...	24 0-30 0
—Cypripediums...	5 0- 7 0
Primroses, per doz. bun. ...	1 6- 2 0
Prunus triloba (Dutch), per bun.	1 0- 1 6
Richardias (Arums) per doz. ...	4 0- 5 0

	s. d. s. d.
Roses, per doz. blooms, Richmond	4 0- 8 0
—Liberty	3 0- 5 0
—Madame Butterfly	3 0- 5 0
—Mme. Abel Chatenay ...	3 0- 4 0
—Melody ...	3 0- 4 0
—Molly Sharman Crawford, per doz.	3 6- 4 6
—Niphetos ...	2 6- 3 6
—Ophelia	4 0- 5 0
—Sunburst ...	4 0- 5 0
Ruscus, French, per bun. ...	1 0- 2 0
Smilax, per doz. trails	3 0- 3 6
Spanish Iris, per doz. bun.—	
—Blue	24 0-30 0
—Mauve	24 0-30 0
—White	36 0-42 0
Yellow	24 0-30 0
Sweet Peas, per doz. bun. ...	6 0-10 0
Tulips, per bunch—	
—Bartagon ...	1 6- 3 0
—Clara Butt ...	2 0- 3 0
—Couronne d'Or	2 0- 2 6
—La Reine ...	1 6- 2 0
—Prince of Austria	1 9- 2 0
—Wm. Copland ...	2 0- 3 0
—Farncombe Sanders	2 0- 3 0
—White Swan ...	2 0- 2 6
Violets, per doz. bun.	2 0- 4 0
French Flowers—	
Anemone	3 6- 5 0
—De Caen, mixed, per doz. ...	4 0- 5 0
Marguerite, yellow, per pad	6 0- 7 0
Marigolds, per pad	5 0- 6 0
Ranunculus, dble. scarlet, doz. bun.	5 0- 7 0
—Carmine, per doz. bun. ...	6 0- 7 0
Star (Allium), per pad, 48's ...	8 0-10 0
Stock, double white, per pad 24 bunches ...	8 0-10 0
—double coloured	8 0-10 0
Violets, Parma, per bun. ...	3 0- 3 6
—single, per pad	6 0- 8 0
Wallflowers, per pad	5 0- 8 0

Remarks.—There has been the usual reaction in business after the Easter trade, and prices of most subjects have been gradually falling during the past week, with the exception of white blooms such as are required for the making of floral designs. The shortage of this class of bloom is caused by the finishing of double white Stock and Allium (Star) which have been arriving from France. All blooms from that quarter now show signs of finishing with the exception of Paeonies, Statice, and Gypsophila, the last being already on the market. Amongst home supplies there are no new subjects to record. Daffodils and Narcissus ornatus are arriving in large quantities. Carnations and Roses are sufficient for present requirements. Amongst Tulips good Darwin varieties are still holding in price; a good supply of the cheaper grades are being received from Guernsey. The variety White Swan is arriving in good condition from this quarter and is very useful at the present time. Spanish Irises are beginning to make a good show. The quality of the blooms is much finer and a better selection of varieties is on sale. There is a very limited supply of Lily-of-the-Valley. Sweet Peas are gradually increasing in numbers with an improvement in quality generally. With the exception of Smilax there is a better supply of foliage, such as Asparagus plumosus, A. Sprengeri, Maidenhair Fern, and Adiantum decorum. Red and White Roses are expected to advance in price during Wednesday and Thursday on account of St. George's Day.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Albermarle ...	45 0-50 0
—Oregon Newtown	14 0-18 0
—Bramley's Seedling	10 0-18 0
—Newton Wonder ...	11 0-16 0
—Worcester Pearmain	15 0-16 0
—Ribston Pippin	15 0-17 0
—Jonathan ...	17 0-18 0
—Dunn's	19 0-20 0
—Alfriston ...	16 0-17 0
—Argentine—	
—Cox's Orange Pippin	24 0-25 0
—Australasian—	
—Cox's Orange Pippin	28 0-30 0
Bananas, singles	17 0-27 6
—doubles... ...	17 6-30 0
—others	17 0-18 6
Grapes—	
—English Hambro, per lb.	6 0- 8 0
—South African—	
—White Hanepoot	6 0-10 0
—Red Hanepoot	8 0-12 0
—Colmar	12 0-14 0

	s. d. s. d.
Grape Fruit, Cuban	18 0-23 0
—Jamaica ...	18 0-20 0
—Florida, finest	20 0-27 6
—other	18 0-25 0
Lemons, Messina, per box... ...	8 0-12 0
—Murcia	10 6-14 0
—Naples	16 0-20 0
Oranges, Jaffa ...	14 0-16 0
—Spanish—	
—300's	18 0-35 0
—360's	14 0-22 0
—504's	14 0-22 6
—Messina Blood	12 0-20 0
Pears, South African—	
—Beurré Diel ...	4 0- 4 6
—Winter Nelis ...	4 6- 7 0
—Doyenné du Comice	6 0-10 0
—Argentine ...	20 0-25 0
Pines	3 6- 5 0
Strawberries, per lb.	8 0-15 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	1 3- 2 0
—Worthing ...	1 0- 1 9
—Madeira, per box	4 0- 8 0
Beets, per cwt....	5 0- 6 0
Cabbage, per tally	10 0-12 6
Canary Island Tomatos ...	25 0-30 0
Cauliflowers, per doz.	2 0- 4 0
Forced Mint, per doz.	4 0-12 0
Chicory, per lb. ...	— 0 6
Carrots, per doz. bun.	8 0-12 0
—New	— —
Cucumbers, per doz.	4 0- 6 0
—Flats, 36's, 42's	12 0-16 0
Dutch Onions ...	11 6 12 6
Endive, per doz.	1 6- 3 0
Batavia, per doz.	3 0- 3 6
French Asparagus—	
—Cavaillon ...	2 3- 2 6
—Lauris	2 9- 3 6
Greens, best, per bag	3 0- 4 0
Horseradish, per bundle	2 0- 2 6
Leeks, per doz. bundles... ...	2 6- 3 6
Lettuce, per doz.	0 9- 2 6
—Cos	3 0- 6 0
—Outdoor ...	1 6- 3 0

	s. d. s. d.
Mushrooms, cups	2 0- 3 0
—broilers	2 0- 2 6
Marrows, doz. ...	6 0-15 0
Onions, Valencia, per case ...	15 6-17 0
—English, per cwt.	12 6-14 0
Parsnips, per cwt.	4 0- 5 0
Peas, French, per cane	6 0- 8 0
—Guernsey forced per lb.	1 6- 2 0
Potatos, Canary Island—	
—Spring crop ...	14 0-16 0
Potatos, per ton—	
—Dunbar ...	200 0-230 0
—King Edward	190 0-200 0
—White ...	90 0-160 0
—New Guernsey lb.	0 6-0 9
—Jersey	0 7-0 8
Scilly	0 7-0 9
Radishes—	
—Round	1 6- 2 0
—Long	1 3- 1 6
—French Breakfast	2 0- 3 0
Rhubarb, Forced, per doz. ...	2 0- 2 6
—"Natural" per doz.	5 0- 7 0
Savoys, per tally	12 6-15 0
Seakale, per doz. punnets ...	2 0- 2 6
Spinach, per bushel	3 0- 4 0
Tomatos, English, per lb.	2 0- 2 6
Turnips, new, per doz. bun. ...	9 0-12 0
Turnip Tops, per bag	3 0 4 0

Remarks.—Business is moving fairly briskly, and for the time of year a considerable volume of produce is being handled. South African fruits, consisting mainly of Pears and Grapes, are a better trade, with Pears showing some advance in price. Australasian Apples, Pears and Grapes are coming in large quantities and meeting a moderate demand. A few American Apples are still available, but are not keenly enquired for. Fruits of English grown Bramley's Seedling and Newton Pippin are still arriving, but generally buyers prefer Australasian Apples. English Black Hamburgh Grapes are selling fairly well considering the competition of South African and Australian Grapes. Oranges and Lemons are moving steadily; Grape Fruit is also a fair trade. Choice vegetables, such as forced Beans, Peas, and Potatos are selling moderately well, but generally they are cheaper, with Peas an exception. English Tomatos show a gradual increase in supply, but their prices are comparatively high. Cucumbers are plentiful and at a very reasonable price level. Well-grown English Lettuces are selling well, as are most salads. Mushrooms are in better supply but prices are firm. Natural Rhubarb is cheaper. Consignments of Canary Island Potatos are plentiful and prices are inclined to be easier.

GLASGOW.

Supplies of cut flowers have been very heavy and while prices moved irregularly, the averages for the past week showed a moderate recovery as the result of the higher values obtained on Friday. Previous to that day trade was poor and as quantities of Tulips arrived in a blown condition the smaller returns obtained for that class had a lowering influence, but the better qualities found a ready market and yielded improved prices. Murillo ranged from 7d. to 10d. for 6's, special, 1s.; Lucretia, 8d. to 10d., specials, 1/3; Bartagon, Copland and Farncombe Sanders 10d. to 1/3; Princess Elizabeth, 1/2 to 1/5; Tea Rose, 8d. to 1/-; blown blooms, 4d. to 6d.; Prince of Austria, 8d. to 13d.; Voorbaak, 1/2 to 1/4; and Gris-de-Lin, 1/6 for 12's. Daffodils were cheap; Sir Watkin, Horsfieldii and Victoria realised 1/3 to 2/- per dozen bunches; Sir Watkin, special, 2/- to 2/6; Emperor, 2/- to 3/-; Golden Spur, 1/- to 2/6; Seagull, 2/- to 2/6; Barrii conspicuus, 3/6 to 4/-; ornatus, Scotch grown, 6/- to 8/-; others 4/- to 5/-. Carnations made from 2/6 to 4/6; Lily-of-the-Valley, 1/6 to 1/9; White Hyacinths, first grade, 1/- for 3's; second grade, 8d.; blue and pink, 6d. to 8d.; White Lilac, 6/- to 8/-; coloured, 4/- to 6/-; Guernsey Freesia, 1/6 to 2/- dozen; Richardias, 6/- to 8/-; Lilium longiflorum (Harrisii) long, 7/- to 8/-; short, 3/- to 4/-; Wallflowers, 2/- to 2/6; Violets, 1/- to 1/3; Irises, 2/6 to 3/6 dozen; Asparagus, 1/- to 2/-, and Smilax, 2/- to 2/6. Roses are disappointing, Richmond, and Lady Hillingdon selling from 3/- to 4/-; Mme. Abel Chatenay, 4/- to 6/-; Mme. Butterfly, 5/- to 6/-; and Mrs. Henry Stevens, 3/- to 5/-. Pot plants were more plentiful. Deutzia yielded 2/- to 2/6 each; small Azaleas, 1/6; large, 4/- to 4/6; Cinerarias, 1/6 to 2/-; Musk, 4/- to 6/- per dozen; Sailors, 5/- to 7/-, and Wallflower plants, 1/6 to 2/- per box.

A feature of the fruit market was the demand for Cape Pears. Beurré Hardy averaged 6/6 per box; Beurré Bosc and Josephine de Malines, 5/6 to 6/6; Beurré Diel, 4/6 to 5/-; Beurré Clairgeau, 4/9 to 5/6; Winter Nelis, 6/- to 7/-, and Bonne Louise of Jersey, 5/- to 6/-. Prices of Cape Grapes were also firm. Gros Colmar at 16/- to 18/- per box, Waltham Cross, and Red Hanepoort, 12/- to 14/-; White Hanepoort, 10/6 to 12/6. Apples were cheaper. Albemarle Pippin sold for 37/- to 40/- per barrel; Ben Davis, 24/- to 30/-; Baldwin (Nova Scotia), 27/- to 31/-; U.S.A. Baldwins, 32/- to 46/-; Ganos (Virginia), 30/-; Oregon Newtown, 13/6 to 18/- per case, and Winesap, 15/- to 17/6. Jaffa Oranges made 10/- to 14/- all counts; Valencia 360, 15/- to 18/-; 300, 17/- to 20/-; 440, 26/- to 33/-; 240, 16/6 to 20/-; 206, 15/- to 18/-; Grape Fruit, special, 27/-; Porto Rico, 20/- to 23/-; Lemons, Palermo, 8/6 to 12/-; Murcea, 14/6 to 18/-; Naples, 16/- to 18/-, all 300's. Australian Pears brought 15/- per box.

In the vegetable section Teneriffe Potatos dropped to 13/6 per box. Cauliflower advanced to 2/- to 8/- and 10/- per dozen. Rhubarb was firm at 40/- to 48/- per cwt. Cucumbers realised 8/- to 10/-; Seakale, 2/6 to 3/6; French Lettuce, 1/6 to 2/-; Dutch Lettuce, 5/- to 6/- (crate); Syboes, 6/- to 7/- doz. bunches; French Turnips, 1/4; Mint, 9/- to 12/-; Radishes, 2/6 to 3/6; Leeks, 2/- to 2/6; Spring Cabbages, 8d. per doz., and Guernsey Beans, 1/6 to 2/-.

SCHEDULE RECEIVED.

Bournemouth Horticultural Society.—Summer exhibition to be held at Meyrick Park on Tuesday and Wednesday, June 30 and July 1; autumn exhibition to be held at the Town Hall, Bournemouth, on Wednesday and Thursday, October 21 and 22. Secretary, Mr. E. S. Rosevear, Shaftesbury Chambers, Bournemouth.

CATALOGUES RECEIVED.

George C. Whitelegg, The Nurseries, Chislehurst, Kent.—Alpine and herbaceous plants.

Martineau and Smith, Holloway Head, Birmingham.—Spraying specialities.

T. Hilling and Co., Orange Hill Nurseries, Edgware, Middlesex.—The "Prosperity" automatic sprinkler.

GARDENING APPOINTMENTS.

Mr. E. Durham, for two years gardener to T. H. Mordey, Esq., J.P., The Spinny, Sully, South Wales, and previously with H. J. Mason, Esq., at Holne Park, Ashburton, South Devon, as Gardener to Lord Newborough, Bryn Llewelyn, Festiniog, North Wales. (Thanks for 2s. for R.G.O.F. Box.—Eds.)

Mr. Ian J. Morrison, for the past six years Foreman to Col. J. N. Horlick, O.B.E., M.C., M.P., Little Paddocks, Sunninghill, Berkshire, as Gardener to Lady Anne Murray, Earlywood, Windlesham, Surrey. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.)

Mr. C. Branch, for the past four years Orchid Grower to the late Fred Hardy, Esq., Tyntesfield, Ashton-on-Mersey, as gardener to Samuel Gratrix, Esq., West Point, Whalley Range, Manchester. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.).

Mr. L. W. Barker, for the past four years gardener to the Rt. Hon. Lord and Lady Waring, Foot's Cray Place, Sidcup, Kent, as gardener-bailiff to Mrs. A. C. Cole, Sherfield Hall, Basingstoke, Hampshire. (Thanks for 2s. for R.G.O.F. Box.—Eds.).

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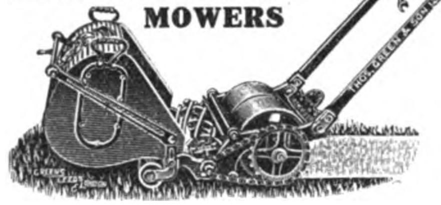

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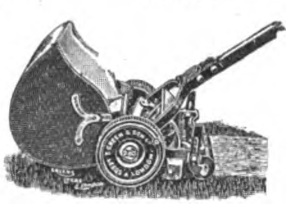

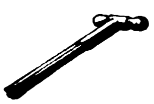

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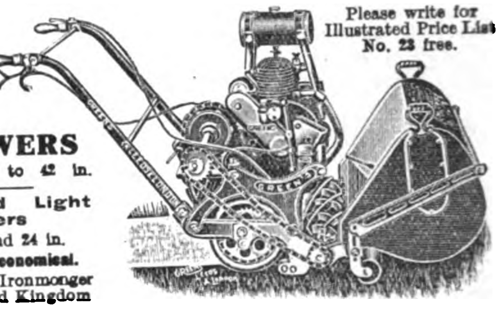

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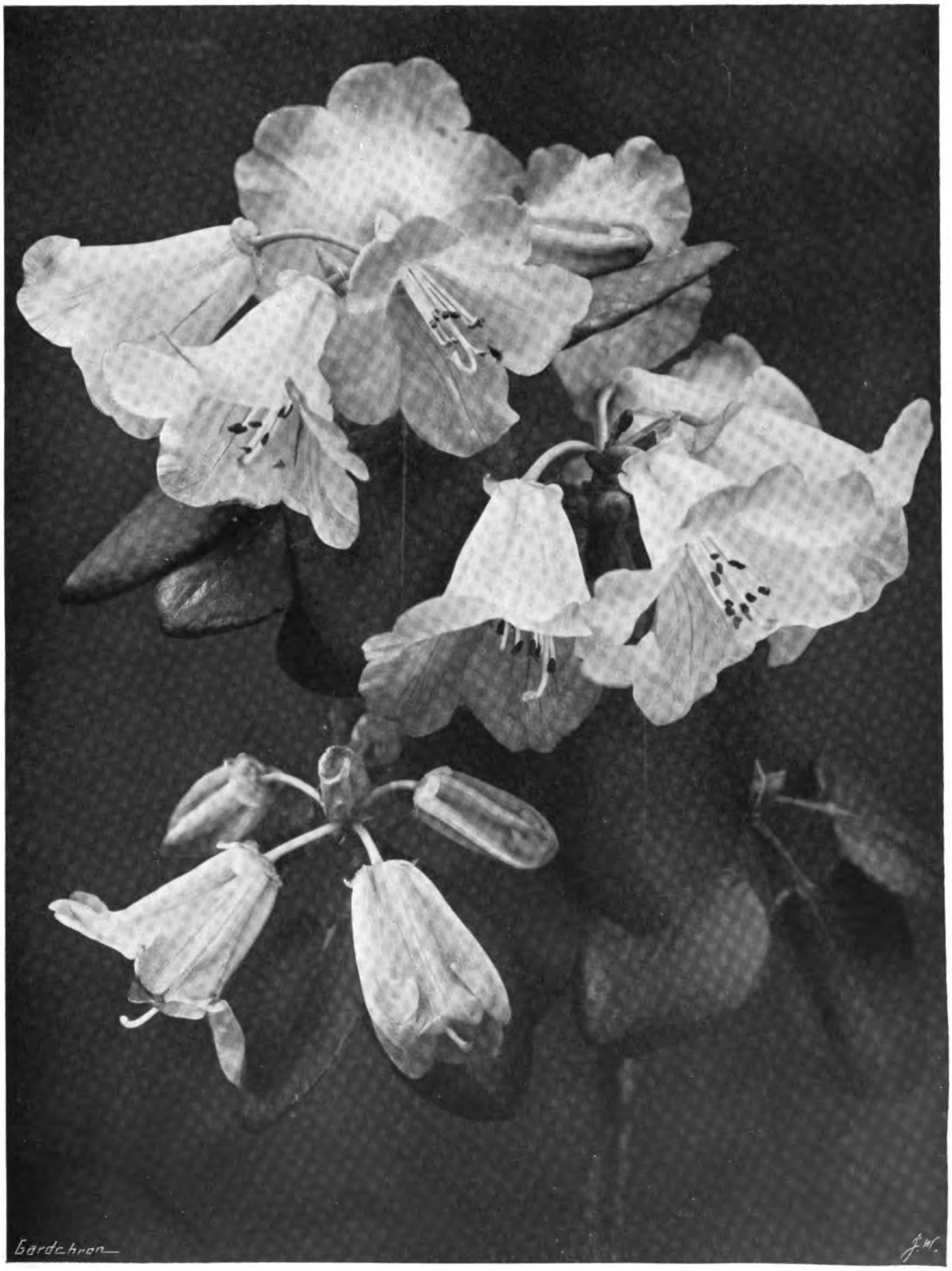
Supplement to The GARDENERS' CHRONICLE.


Gardchron
J.W.

RHODODENDRON EXMINSTER.

THE
Gardeners' Chronicle

No. 2001.—*SATURDAY, MAY 2, 1925.*

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SUPPLEMENTARY PLATE.
Rhododendron Exminster.

AVERAGE MEAN TEMPERATURE for the ensuing week deducted from observations during the last fifty years at Greenwich, 50·7°.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, April 29, 10 a.m. Bar. 30·2, temp. 56°. Weather, Sunny.

The Garden in Spring.

ONLY gardeners with exceptionally long memories can recall a time when there were more arrears of work than there are in the present spring. Throughout the wet winter things which needed to be done had, perforce, to be left undone. Where the soil is light and well-drained, the paths and roads solid in spite of incessant rain, winter work went on no doubt with its customary regularity; but in those numerous gardens where these ideal conditions do not obtain, winter work, on which the success of the garden year depends, was held up at every point. Digging was impossible, carting of manure no less impossible. Young trees straddling and swaying in the soil puddled by rain had to be staked albeit that the operation did no good to the ground about them. Weeds grew apace, so that land turned over and left rough in the late autumn became green with them, and only in the northern districts where a succession of kindly frosts occurred were some of the effects of the prevailing wetness mitigated. The psychological factor manifested itself also to the detriment of garden work. A gardener would be inhuman who did not now and again despond at the inability to get on with pressing work and the discomfort of trying to do so. Yet no matter how deep may have been his despondency, now that spring has set in, even though it has come with its usual severity, hope returns, and with it cheerfulness reigns again in the garden. The winter greens may have been spoiled, but the prevision of the experienced gardener has seen to it that there is a supply of Lettuces and such-like quickly-growing vegetables. The wet summer and winter prophesied failure of fruit, but the Plums and Damsons are blossoming more profusely than we have seen them do for many years. The hail of last week, heavy and bitter cold, has somehow left the trees unscathed, and hope refuses confidently to apprehend that this year in this island it will be a case of "blossom and blossom and promise of blossom, but never a fruit. . . ." The Apples have not yet opened their flowers, and so have taken no harm. Their trusses show thick and close and the trees look promising. Those, at all events, who found occasion to get the spraying of them done and, to a lesser degree, those who do it after the blossom has set, may look forward to a good crop. Pears, so far as we have seen, are evincing their usual capriciousness. Here and there, perhaps in all, some half of the trees are as full of just opening blossom as they could be, but the other half has decided to have a barren year and bears not a single bloom. *Market-grower*, greatly daring, ventures to call in question the garden doctrine of the influence of "ripening of wood" on the production of blossom. Well! let us wait and see. If in spite of partial promise there is a good crop of Pears, we will confess our belief in that doctrine to be shaken. The rush of work that is now upon us may prevent the exercise of that first gardening virtue—observation. If so, our garden will suffer. Even a little frost may lift plants, put in last autumn, out of the ground, and if those plants be not well trodden in they will assuredly be lost during the summer. Then, before it is too late, the self-sterile Plums—the Drops, for example—need to be pollinated; a simple matter, requiring merely the tying of one or two flowering branches of another Plum to theirs and leaving wind and bees to do the pollination. Presently Cox's Orange Pippin and any other partially self-sterile Apples will need to be treated in like manner. It pays to do so, at all events, in many gardens. Then there are the climbers which the high winds have torn from their supports. They need immediate attention. Fortunately, the toll which winter took of precious shrubs has been a light one. A few ornamental Conifers, perhaps—Abies pungens glauca, for example—have failed to survive, but for the most part there are but few losses to record. Not only is this so, but the early-flowering shrubs have all conspired to put fresh heart—if he need it—into the gardener. Forsythias have never flowered more profusely; Viburnum Carlesii and Spiraea Thunbergii are full of flower; Cytisus praecox, Prunus triloba, and that wonderfully-beautiful common plant, which cannot be too common, Berberis Darwinii, are all full of blossom. The white stars of Magnolia stellata are, it is true, all turned brown by the hail, but to-morrow or the day after other stars will rise in their place. The double-flowered dwarf Gorse is shedding its sweetness and luring the bees from the orchard, none the worse for its winter soaking. And in the water garden King Cups and Trollius and Anchusa myosotidiflora, the massed Polyanthus and the ever-flowering Primula Juliae, are making a brave show, whilst the Gunneras pushing out their great buds, remind us that frost succeeds hail and that a little litter may save them from the ill-effects thereof. And so the wise gardener reflects after his heavy day spent in trying to catch up with the work, that although he has had much to put up with he has much also to enjoy. For the gardener who does not love his garden ought to find other employment. The true gardener knows the highest form of human enjoyment—happiness in his work—and if that be so he has at the present time more than enough to make him happy.

Our Supplementary Plate.—The Rhododendron depicted in our supplementary illustration for the present issue is of the variety Exminster, for which Messrs. R. Veitch and Son received the R.H.S. Award of Merit on April 10, 1923. It is a hybrid raised from R. campylocarpum and R. gloxinaeflorum; the latter parent was introduced by the same firm from the Himalayas, and is probably a form of R. arboreum. The colour of Rhododendron Exminster is cream, tinged with deep pink. It is a most glorious variety of similar habit to R. campylocarpum, very free-flowering, and appears to be equally as hardy as that species. Mr. P. C. M. Veitch informs us that the original seedling in the Royal Nurseries at Exeter is at present a sheet of colour.

Fédération Horticole Professionnelle Internationale. — The international horticultural conference held at Haarlem in connection with the international show was very well attended. Mr. Ruys presided. Holland, Great Britain, France, Switzerland, Belgium and Luxembourg were represented. Several American horticulturists were present as visitors and both Mr. de la Mare and Mrs. King accepted an invitation to join in the discussion concerning the American Quarantine Order which practically prohibits the importation of plants from Europe. Both expressed their belief in free trade for plants. Canada was admitted to the Federation and so was Germany, and after admission two German horticulturists took their places as delegates. We hope to give further particulars of the Conference in our next issue.

Acarine Disease among Bees.—At the quarterly meeting of the Executive Council of the Scottish Beekeepers' Association presided over by Mr. James Cochran, Kilmarnock, at Stirling on the 26th ult., Mr. G. W. Avery, on behalf of the Edinburgh and District Association, called attention to the necessity of legislation to combat the effects of Acarine disease and moved that a committee be appointed to take a plebescite of bee-keepers in Scotland on the subject. He believed that bee-keeping would not make any substantial advance until there were measures to deal in a drastic way with disease. The motion was eventually ruled out of order on the ground that no notice of it had been given, but Mr. Avery intimated that it would be brought forward at the next meeting.

Kewites at Haarlem International Conference and Exhibition.—There was an interesting gathering of eight old Kewites at Heemstede, Haarlem, on the occasion of the recent Conference of the Fédération Horticole Professionnelle Internationale in connection with the International Show on April 24 to 27. Those present were M. Gentil, Curator of the Brussels Botanic Gardens; Mr. Gullick, nurseryman Salisbury; Mr. A. S. Galt, Leeds University; Mr. Goemans, Dutch Consul in Belgium; Mr. Waugh, of Messrs. R. H. Bath, Wisbech; Mr. Bintner, Luxembourg; Mr. Horton, of Messrs. Bees, Liverpool; and Mr. Chas. H. Curtis, *The Gardeners' Chronicle*.

Cider at Long Ashton.—The Ciders made during the season 1924-25 will be displayed at the Research Station, Long Ashton, Bristol, on May 7, and the fruit plantations of the station will be open to visitors from 11 a.m. to 4 p.m. During the course of the day the experimental work in progress in the plantations and in the laboratories will be explained by members of the staff.

The Dominica Lime Industry.—Owing to the low prices for Lime juice, citrate of Lime and other products of the Lime industry, the Dominican growers shipped only 228,000 barrels in 1923, as compared with 516,000 in 1921 and 400,000 in 1922. The reduction of shipment is largely due to the withholding of stocks rather than to decreased output, although the disease known as wither-tip is causing much loss to the growers. The principal export is the concentrated juice, which represented 118,908 of the barrels of fruit exported, approximately 52.1 per cent. of the crop. Of fresh Limes, some 20,000 barrels were exported, and rather more than 21,000 barrels of citrate of Lime. The total value of the exports of the Lime industry in 1923 was £93,587.

Legacies to Gardeners.—The late Mr. Algernon Gilliatt, of Duffield, Stoke Poges, Buckinghamshire, who died on January 24, left £100 to his gardener, Mr. Edward Johnson; the late George Henry Kempe, of Chepston Road, Croydon, bequeathed £300 to Mr. William Walker, his gardener; Mr. William Arkwright, of Thorn, Knighton, Devon, who died on February 19, left £100 to his gardener, Mr. James MacFadyean, and similar bequests to others of his garden servants; the late Mrs. Janes Howden or Jameson-Torrie, of Denork, St. Andrews, Fife, bequeathed £100 to her gardener, Mr. David Finlay; the late Mr. Thomas Williams, of Uffington House, Dill Hill Park, Chester, left his gardener, Miss Ethel Bailey, £200.

The Bulb Fields of Holland.—Those of our readers who can spare the time for a visit to Holland should cross over to the Netherlands so soon as possible. The bulb fields of Holland present a picture of gorgeous colouring that is probably unequalled in the world. From The Hague onwards to Leiden and Haarlem and also towards Amsterdam, the traveller by train or tram passes through miles of bulb fields. Hyacinths are almost over and the growers are cutting the flowers; early Daffodils are being similarly treated and the flowers are placed in large, tidy heaps to decay, or are strewn on vacant land ready to be dug in. Early Tulips are a perfect blaze of dazzling colours with some softer colours to throw the rest into high and striking relief. Late Tulips will carry on the kaleidoscopic display for two or three weeks to come, but there should be no delay in visiting Holland if the splendour of the bulb fields is to be witnessed. For those who prefer travelling by day there is the Folkestone-Flushing route, and for those who wish to save time by crossing at night there is the Harwich-Hook of Holland route.

Retirement of Curator of Leningrad Botanic Garden.—Mr. C. Meissner, The Curator of the Botanic Garden at Leningrad, Russia, has recently retired, after twenty years of unremitting service. He has been feeling for some time a desire to return to his native Germany, and it is possible for him to do so now that conditions are a little more settled in Leningrad, though he was greatly valued and will be exceedingly difficult to replace. His departure was marked by a complimentary address from the Director of the Garden, before a gathering of the whole staff, together with the students and professors working at the gardens. Our readers will doubtless recall a very interesting account of the vicissitudes of the gardens during the war from the pen of Mr. Meissner, which appeared in our issue of March 7 this year (p. 162).

Mr. B. Ruys.—In view of the meeting of the Fédération Horticole Professionelle Internationale held on April 23 and 24 in connection with the Haarlem International Exhibition, we take the opportunity of publishing the portrait and a few particulars of the career of Mr. B. Ruys, the President for the current year. Mr. Ruys is well-known to many of our readers as head of a most successful nursery business, the Royal Moerheim Nurseries, Dedemsvaart, Holland, and he is the raiser of some of our most popular border perennials. He was apprenticed in the Royal Tottenham Nurseries, at Dedemsvaart, which were established by Mr. Jongkindt Coninck in 1872. This was probably the first continental firm that specialised in hardy perennials, and Mr. Ruys' interest in hardy border flowers and alpines commenced from that period. He gained further experience in Messrs. T. S. Ware's nurseries at Tottenham, London, and in a few continental firms until, in 1888, he commenced business on his own account. He specialised in hardy perennials, and began crossing and selecting with a view to obtaining new varieties. His first novelty of note was Campanula persicifolia Moerheimii and this fine plant did much to establish the reputation of the new firm. His business extended, and Mr. Ruys soon did a large trade with most European countries as well as with America. In 1920 his business was converted into a private limited company, and a year later the firm purchased the Royal Tottenham Nurseries where Mr. Ruys had worked as a young man. At the present time the Moerheim Nurseries have an area of one hundred acres, seventy-five of which are devoted to the culture of perennials and twenty-five to the cultivation of Rhododendrons, Conifers, shrubs, Currants and Raspberries, Rose stocks, etc. The firm's catalogue is issued in Dutch, English, French, German, Swedish, Danish, and Spanish, but the business is entirely wholesale. Amongst the numerous plants raised at Moerheim are Phlox General van Heutz, Astilbe grandis rosea magnifica, Œnothera speciosa hybrida and Caltha palustris Hortulanus Budde. Mr. Ruys is well known in this country, which he visits usually twice a year, and he has attended most of the Temple and Chelsea shows. Mr. Ruys is a great traveller, and he remarks that he has seen more of the beautiful parts of Kent, Devon, Cornwall, Wales, the Lake District, and the Highlands than many of our countrymen whom he often meets abroad.

MR. B. RUYS.

Botany in the Victorian Age.—A public lecture entitled "Personal Reminiscences of Botany in the Victorian Age—and After," will be delivered by Prof. F. O. Bower, F.R.S., on Friday, May 22, at the Birkbeck College, Bream's Buildings, Fetter Lane. The lecture will commence at 8 p.m., and the chair will be taken by Prof. Dame Helen Gwynne-Vaughan.

Florists' Telegraph Delivery Association.—The Annual General Meeting, International Conference, and Dinner of the Florists' Telegraph Delivery Association will be held on May 20, the second day of the Chelsea Show, at the Connaught Rooms, Great Queen Street, London.

The Skunk Cabbage.—Spathyema foetida (Symplocarpus foetidus), a monotypic genus of Aroideae, native of swampy places in North-East and North America, Asia, and Japan, originally described by John Josselyn, in *New England's Rarities Discovered* (1672) as among plants which are "proper to the country and have no name," is more interesting than attractive. As Josselyn observes, "the whole plant scents as strong as a fox"—hence the unprepossessing common name. The great leaves and spathe spotted and striped with purple and yellowish-green, apt to appear with the earliest of spring flowers, marks the plant down as one likely to be pollinated by carrion-loving flies. No less curious are other peculiarities described by J. Marion Shull as the result of recent observations* of this remarkable plant. Spathyema foetida produces a succession of spathes of which only half come to maturity, and then only one at a time. The head of the spadix, containing the seeds, looks like a Pineapple, and the seeds themselves, when ripe, have lost their seed coats and may show viviparous growth. The roots are strongly contractile and are continually lugging down the plant into the soil, with the result that the base is always being rubbed away until it becomes as smooth as a pebble. Owing to this habit, so much of the lower part of the plant is worn away that it is impossible to judge of the age to which the plant attains.

Glasgow Housing Scheme Gardens.—An interesting legal question has arisen in connection with the allocation by Glasgow Town Council of £50 for prizes to be awarded for the best kept gardens in the corporation housing schemes. At a recent meeting of the Council, the Town Clerk, Sir John Lindsay, in answer to a member who questioned the legality of the expenditure, said he had great doubt about it all along, but the Corporation had taken the risk. Mr. Martin, on behalf of the Committee, said that the award of prizes in connection with the housing schemes was very desirable, as the residents deserved every encouragement in the cultivation of these plots. It was remarkable to see the results which some of them had achieved in making gardens on ground which was more slag than earth. The Council had not been informed that the giving of prize money was illegal, but in view of the statement of the Town Clerk he promised that the position would be considered next year. The objection was withdrawn on that understanding, but it does seem to be an anomaly that a Town Council which guarantees prize money amounting to £1,500 annually at the Glasgow Flower Show cannot legally grant £50 for a garden competition among their own tenants.

Forthcoming Continental Exhibition.—Altona, Germany, is to be the scene of a great Dahlia, Rose, and floral exhibition, which will be held from the 11th to the 25th September this year. The German Dahlia and Rose Societies, as well as large numbers of nurserymen and growers, will combine to make the exhibition a success, and it is expected that large numbers of visitors will be attracted.

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* Spathyema foetida. *Botanical Gazette*, LXXIX. March, 1925.

German Nursery Employee's Long Service.—On the 30th of March the sixty-fifth year of service was celebrated at the well-known nursery of Ernst Benary, Erfurt, of the head gardener, Albert Robst, who is now nearly eighty years of age. The occasion was celebrated by a large gathering of members of the firm and friends of Herr Robst, and Herr John Benary made a complimentary speech. The firm has a reputation for keeping its employees for long periods; no fewer than 112 have been with the firm over twenty-five years, and four over fifty.

Appointments for the Ensuing Week.—Sunday, May 3.—Wakefield and North of England Tulip Society's meeting. Tuesday, May 5.—Royal Horticultural Society's Committees meet (2 days); National Tulip Society's Show and National Auricula and Primula Society's Show at R.H.S. Hall (2 days); British Carnation Society's annual dinner; Royal Caledonian Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting. Wednesday, May 6.—Royal Agricultural Society of England Council meeting; National Viola and Pansy Society's meeting. Thursday, May 7.—Nottingham and Notts Chrysanthemum Society's meeting. Friday, May 8.—Royal Horticultural Society of Ireland Council's meeting; Orchid Club meets. Saturday, May 9.—British Mycological Society's spring foray for London students.

"Gardeners' Chronicle" Seventy-five Years Ago.—*The Stanwick Nectarine.* The Stanwick Nectarine is at length announced for sale. On Wednesday, the 15th of May, the first twenty-four plants which it has been possible to propagate will be brought to the hammer by Mr. Stevens (see advertisement) and no further supply can reach the market until next winter; so that the purchasers of these plants will be one clear year in advance of the earliest possessors of any which may be offered for sale hereafter. We mention this for the purpose of correcting a misapprehension upon the subject; some persons having imagined that the present sale is to be speedily followed by another. Beyond the twenty-four which Mr. Stevens is now directed to sell, no other young plants at present exist. The original Nectarine tree is in the possession of his Grace the Duke of Northumberland, at whose seat, at Stanwick, it has borne fruit for several years, and from which it derives its name. The Duke received it from the late Mr. Barker, of Suadia, in Syria, a gentleman whose attention had long been turned to the acquisition of the finest fruit trees of the East, in the hope that they might be valuable in his native country. It was his anxious desire that such as proved to be adapted to the climate of the United Kingdom might be immediately dispersed; and the sale now announced is in furtherance of Mr. Barker's benevolent design. In surrendering his property in it to the public, the Duke of Northumberland has resolved that the proceeds, after paying the expenses of propagation, etc., should be transferred to a fund in aid of the Benevolent Institution for the relief of infirm gardeners: a plan in which Mr. Barker heartily concurred, and which we trust that the well-wishers to this excellent charity will heartily support. The sale will take place on the anniversary of the Institution, and the purchasers will have the satisfaction of knowing that in this instance they may contribute materially to its funds, while at the same time they are consulting their personal interests.—*Gard. Chron., May* 4, 1850.

Publications Received.—*Vegetable Growing.* By George Garner; *Rock Gardening.* By Walter Irving. Country Life, Ltd., 20, Tavistock Street, Covent Garden, W.C. 2. Price 2s. 6d. each. *Fifty Famous Farmers.* By Lester S. Irvins and A. E. Winship. Macmillan and Co., Ltd., St. Martin's Street, W.C.

IRIS GARDEN.

IRIS WATTII.

The beautiful white-flowered Iris (see Fig. 119), which received the Royal Horticultural Society's Award of Merit on the 21st ult., when shown by Mr. W. H. Walters, of Colesborne Gardens, Gloucester, is so distinct from the I. Milesii, as illustrated in *Bot. Mag.*, t. 6889, that it is a wonder it could ever have been confused with it. In the *Genus Iris*, I. Wattii is given as a synonym of I. Milesii, but Baker in his monograph of the *Irideae* regarded it as a distinct species of the sub-genus Pardanthopsis, although it is interesting to note that Baker named it Watii, that is, with one "t," whereas in his footnote of the habitat, which is given as the summit of Kongui Hill at an altitude of 6,000 feet, he refers to it as *Watt* 6337. The confusion doubtless arose through there being only one dried specimen in the herbarium at Kew which probably Baker had seen in its fresh condition. The matter has, however, been set at rest by Mr. W. R. Dykes, who states in his *Handbook of Garden Irises* that he received a small packet of Iris seeds from Pere Ducloux which he saw at once were distinct. The seeds germinated readily, and Mr. Dykes flowered the plants in April, 1914, in their second year. He states that the plants grew very rapidly, and by the end of September the stems had reached two feet or more in height, with very broad, long leaves.

The blooms are very similar in shape to those of I. japonica and are faintly tinged with pale mauve. The edges of the segments are wavy and the falls have a small, erect, orange crest in the centre of a small orange blotch. Mr. Dykes expresses doubt as to the hardiness of this beautiful Iris, for he states that it is obvious it is only in the mildest of winters that the plant will be a success in the open.

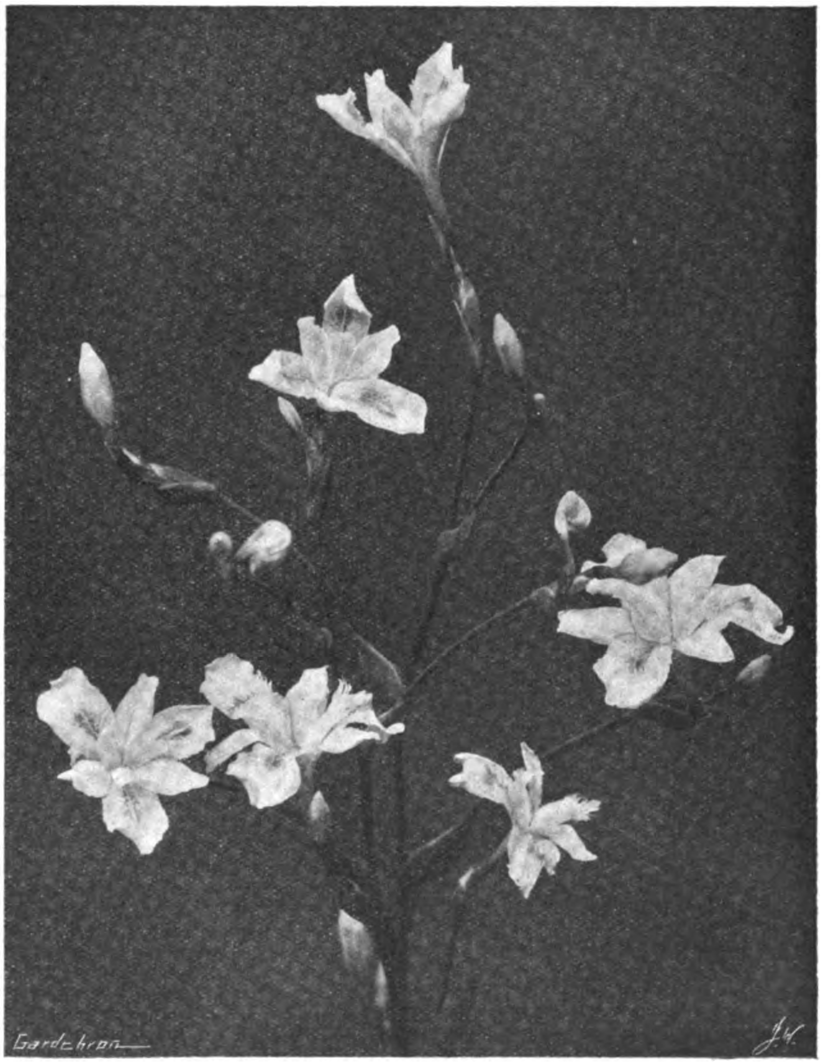

FIG. 119.—IRIS WATTII.

IRIS TECTORUM.

Iris tectorum, which belongs to the same section as I. Wattii, has beautiful flowers of deep lilac or purple shade with the standards extended almost horizontally. The blades of the falls are mottled and blotched with a darker shade, and there is a conspicuous white crest with a few brownish-purple markings.

This species is known as the "Roof" Iris from a fabulous story recorded that the Japanese ladies planted the roots on the thatched roofs of their houses to enable them to indulge in and continue using an extract from the roots as a face powder.

It appears that by the command of one of the Emperors of Japan and on account of a famine in the land, orders were given that all gardens must be cleared of flowering plants and the ground dug, so that grain might be cultivated to supply food for the inhabitants. The roots of this Iris were taken up by the Japanese women and planted on the thatched roofs of their houses, where they flourished and produced roots equally as strongly as in the garden. Soon the delicately sky-blue flowers of Iris tectorum was to be found dancing and waving from numbers of thatched roofs. *W. Logan.*

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Cattleya and allied Genera.—Cattleyas and the numerous hybrids raised by inter-crossing them with Laelias, Brassavola and Sophronites constitute the most important group of Orchids under cultivation. No hard and fast rule may be laid down as to the best season for repotting these plants, as in a representative collection some will be in flower at all seasons. The most suitable time for the operation is when new roots are observed to be pushing from the base of the last formed pseudo-bulbs or young growth. Plants that produced their flowers during the late autumn and winter are now at that stage and should be given attention in this respect. Healthy specimens requiring increased rooting space should be afforded larger receptacles, taking care, in removing the plants from their pots, not to injure the roots more than is unavoidable. Where the roots are clinging so firmly to the sides that the plants cannot be taken out without damaging them, the pot should be broken and removed carefully in pieces. Many of these species and hybrids are of a vigorous habit of growth, and should be afforded more rooting space than less robust kinds.

Repotting.—In repotting these Orchids, cut away the dead roots, remove all decayed soil and useless back pseudo-bulbs, leaving three sound pseudo-bulbs behind each growing lead. Pot firmly and arrange the compost nearly level with the rim of the pot. A suitable rooting medium is Osmanda-fibre broken up rather roughly, mixed with a small quantity of Sphagnum-moss and crushed crocks. A house or division is best set apart for this class of plants; the span roof type of house is most suitable, and it should be fitted with sufficient water pipes to maintain the required temperature without having to heat them to excess. As a general rule, the night temperature during winter should fluctuate between 57° and 60°, with a rise during the day of 5° or so. During the summer a higher temperature will cause no harm to the plants.

Shading and Ventilating.—Plenty of light is essential for building up stout, firm pseudo-bulbs capable of producing good flowers, but the plants should not be exposed to the sun's rays to such an extent as to cause scorching of the foliage. The blinds should be lowered when it is found that the leaves have become warm, and they should be drawn up again so soon as it can be done with safety. The lower ventilators may be open more or less throughout the year, except on very frosty nights and when strong, drying winds prevail. Air should be admitted through the top ventilators much more sparingly, and always on the leeward side of the house. Plenty of atmospheric moisture is necessary during the summer and when the plants are making their growth.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Flowering Shrubs.—The pruning of such plants as Forsythias and other early-flowering shrubs should be done immediatly after they have passed out of flower. This consists in cutting out all the old growths which are not wanted so that the new shoots may have ample room to develop and produce healthy, well-ripened wood for next year's flowering.

Dahlias.—Old plants which have been stored in a cool place during the winter cannot be kept dormant after this time, and it is better to plant them out and make some provision for protecting them, if necessary, than to allow them to make etiolated growth in store. Young plants which have been raised from cuttings this season should be potted on, as necessary, and grown on under cool conditions, until all danger of frost is over. Tubers which have been left outside and covered with material which may have become partially decomposed, should have this removed before growth begins, substituting a little light, dry material if there is still danger of frost.

Trees and Shrubs.—Recently transplanted trees and shrubs should be examined from time to time to see if they have become loosened in the soil and if so they should be thoroughly consolidated. Evergreens with heavy heads are frequently difficult to keep in position, and they should have a strong cord or wire stretched from them in the direction of the prevailing winds and fastened to a stout post driven into the ground at a suitable distance. A substantial mulch of partially-decayed manure is of great benefit to all trees and shrubs and to those newly-planted in particular.

Climbers.—Many climbers on walls are growing freely and will need frequent attention in the matter of training and tying the shoots. At this season much may be done to prevent overcrowded growths by judicious disbudding. It should be borne in mind that plants growing on walls frequently suffer from lack of moisture, as not only do they often fail to derive full benefit from the rainfall, but, owing to their position, they sometimes draw considerable quantities of water from the soil through excessive transpiration. Recently planted subjects should, therefore, be watered copiously at frequent intervals, and established plants benefit greatly from occasional heavy waterings.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Humea elegans.—Plants of Humea elegans, if not already potted, should be placed in their flowering pots forthwith. To produce fine specimens, pots of nine-inches or ten-inches in diameter should be employed at the final shift. To this end, the plants should have been raised from seeds sown last July, kept growing during the autumn, and have been potted on into six-inch pots during February or early March. Good, fibrous loam, enriched with well-decomposed manure, and mixed with sufficient broken charcoal and coarse sand to render it porous, will form the best compost for them. The pots should be well-drained to ensure a free passage of water. Although cool treatment is, on the whole, called for, nevertheless, moderately-warm conditions and a fairly moist atmosphere may, with advantage, be afforded at this time of the year until the pots have become well filled with roots, and up to the time that the flower heads are showing. After this, cooler and more arid surroundings will be necessary. Indeed, when the panicles of flowers are developing, a sunny position out-of-doors, sheltered from wind, is the best situation for the plants, thus ensuring firmness in the flower stems and good colour in the flowers. At this stage the plants will need very careful attention in the matter of watering (on hot days copious supplies will be necessary) and feeding on frequent occasions with liquid manure should be resorted to. Plants raised from later sowings may be flowered in six-inch and seven-inch pots, and these should prove useful to employ in the foreground of large groups of plants, or in those of smaller dimensions.

Primula sinensis.—Seeds of this Primula should now be sown to provide plants for late autumn and early winter flowering. Sow the seeds thinly in well-drained pans filled to within an inch of their rims with soil comprising three parts fresh leaf-soil, one part sandy loam, and a free addition of silver sand, the whole being passed through a quarter-inch sieve. The pans should be prepared, and the soil in them watered thoroughly a day previous to sowing the seeds, which should be barely covered with finely-sifted soil. Cover each pan with a square of glass and a sheet of paper, and place it in a warm greenhouse to hasten the germination of the seeds.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Cucumbers—These plants require considerable attention in stopping and regulating the side shoots, but do not stop the leader until it has grown to nearly the top of the house. Remove all tendrils and badly-formed fruits. Over-cropping must be guarded against, as this soon exhausts the plants. Slight top-dressings of warmed soil and frequent supplies of liquid manure will prove most beneficial to the plants. A very slight application of blood from the slaughter-house will greatly improve the colour of the fruits; when the latter are required for exhibition blood should certainly be used; the difference in colour will be noticeable in three or four days. Unless the sun is very powerful, it is best not to shade, but to ventilate more freely. The finest Cucumbers I have seen in the Lea Valley have been produced by this method. Maintain plenty of atmospheric moisture at all times and use plenty of manure water for damping the houses late in the day. Care must be taken to keep red spider in check. For home use, cut the fruits when they are quite young, taking care not to rub off the bloom. Where a crop of Cucumbers is to be grown in frames, the present is a suitable time to make the main sowing. Prepare hot-beds as previously advised, so that everything will be in readiness to receive the plants later. Wash the glass and framework thoroughly, and whitewash the walls and interior of the frames. If the frames are stood on hot-beds place the soil in ridges in the centre of the lights and slightly cover the whole surface with a thin layer of the compost. Keep the plants close and well sprayed; in the case of those growing in frames it is advisable to use a very light shade, giving the usual attention to stopping, etc. Only when seed is required should the blooms be pollinated, as this results in irregular-shaped fruits.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Strawberries.—The plants on warm borders are sending their flower trusses well above the foliage, and all weeds and decayed leaves should be removed. Work the hoe very carefully between the rows to loosen the surface soil and destroy seedling weeds. The border should then be bedded down with clean straw to keep the fruit clean if the straw is tied in trusses cut the latter in three, the more easily to work the straw around the plants. If straw is not obtainable, litter from the stable may be used, but all the manure should be shaken out, using only the straw, which the rains will wash clean and the sun bleach before the berries are ripe. Litter from the stables should be placed on the borders when the foliage is quite dry.

Newly-planted Trees.—Trees newly-planted against walls should be examined to see if the soil is in a moist condition, for although rains have fallen frequently since the end of February, they have not totalled quite two inches, and but little moisture may have reached borders under walls. In the case of light soils it will be advisable to be on the safe side and water them, as moisture soon drains away from the base of a wall. If the soil is on the dry side water the trees with clear water, selecting a warm day for applying it, and if time allows syringe the trees late in the afternoons of warm, sunny days. A thin layer of mulching material should be applied after the watering; straw or light litter from the stables will serve quite well, but it should not be placed so thickly as to exclude the warmth from the sun's rays.

Grafted Apple and Pear Trees.—Where these trees have been re-grafted and clay used to exclude the air, the ball of clay should be examined daily in hot weather, and if found to be cracking carefully moistened by drawing a wet hand over it until all cracks are closed up. This will keep the junction of scion and stock more air-tight, and assist the bark of the tree to callus.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Runner Beans.—A sowing of Runner Beans may now be made in the trenches prepared as advised in a previous calendar. Do not make the final sowings at this time, but wait for at least another fortnight, then when the seeds of this sowing have germinated all dangers from frost will be over. There are several good varieties to choose from, some of the best being, Best of All, Colossal, Scarlet Emperor, and Prizewinner. Any of these varieties, given liberal treatment, will produce good, straight beans for all purposes. Gradually harden off the plants of the earlier sowing made in boxes or pots, but do not be in a hurry to plant them out in their permanent quarters until all danger of frost is over.

Beetroot.—It is a suitable time to make the main sowing of Beetroot, both of the long and globe types. Do not choose very rich ground with which fresh manure has been recently incorporated or the roots will grow coarse. Sow the seeds in drills made at least fifteen inches apart; keep a sharp watch for mice as they are very partial to Beetroot seeds. House sparrows are troublesome to the seedlings in some districts and will soon clear all of them from the seed bed. If straight-rooted Beets are required for the autumn shows, holes should be bored and filled with finely-sifted soil, dropping three or four seeds in the centre of each station; choose one of the black varieties for show purposes, as the judges are influenced in their awards by deep colour.

Chicory.—This salad may be sown at any time now in drills made eighteen inches apart. Beyond keeping the soil free from weeds, little attention will be required until the roots are finally lifted in the autumn. These may be brought on as required under the staging in a greenhouse or in a Mushroom house; the young, bleached leaves provide a welcome addition to winter salads.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

East Lothian Stocks.—Plants raised from seeds sown in January are growing freely in frames, from which the lights may be removed altogether. Thus treated it will be safe to transfer them to their flowering quarters in the second week of May. East Lothian Stocks thrive and flower best on ground that has been previously well enriched; they should be planted at least fourteen inches apart each way.

Bedding Calceolarias.—These may now be exposed to outdoor conditions, and any long growths regulated by pinching. I usually plant these Calceolarias immediately after planting Stocks, but afford them slight protection against late ground frosts by placing short Spruce branches around them. Exercise great care when lifting the plants from the cutting bed as they are very easily broken at the neck.

Cold Frames.—All bedding plants of a half-hardy nature in cold frames should be given an abundance of air on fine days with a view to having them hardy towards the end of the present month. On fine days remove the lights entirely.

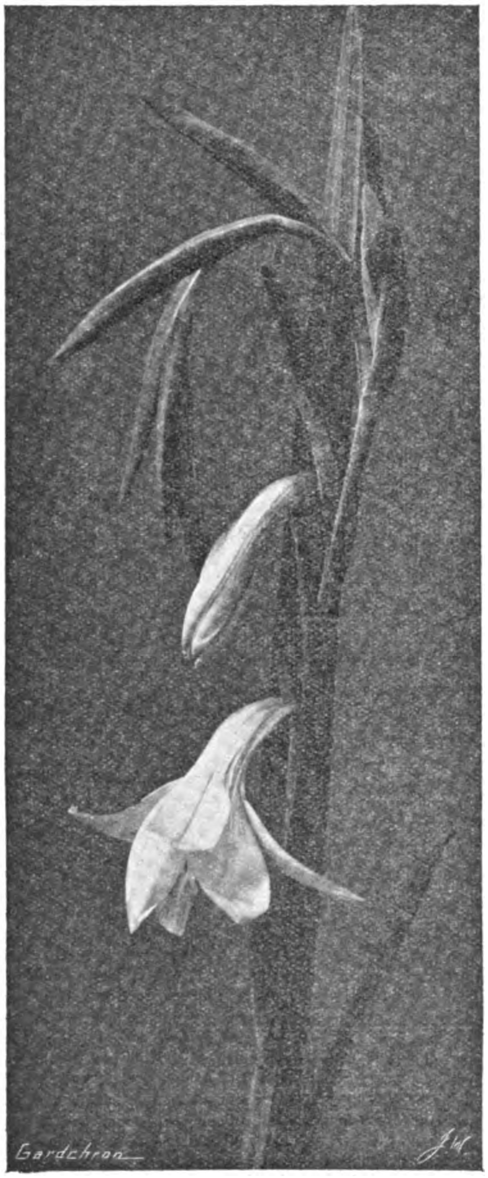

FIG. 120.—GLADIOLUS MACKINDERI.

Violets.—Plants that have been flowering in frames may now be removed and divided with a view to planting the divided portions on a border that is not exposed to the mid-day sun. Red spider may be kept in check during dry weather by spraying the plants on frequent occasions with diluted liquid cow manure late in the afternoon.

Culinary Peas.—May is the chief month for making the main sowings of Peas, and where large quantities are necessary it is well to sow two lines instead of one. The plants of the earlier sowings will now require staking.

French Beans.—A sowing of French Beans may now be made in a cold frame if one is available. This sowing may be followed in about ten days by the first out-door sowing made on an early border.

BULB GARDEN.

GLADIOLUS MACKINDERI.

ALTHOUGH Gladiolus Mackinderi (see Fig. 120), which received the R.H.S. Award of Merit on April 21, has been in cultivation for a considerable number of years, few growers in this country have seen this tall-growing species. It was found on Mount Kenia by Prof. Mackinder of Christ Church, Oxford, in 1900, and the first plants in this country were raised and flowered in a glass-house in 1901.

This species of Gladiolus is illustrated in *Bot. Mag.*, 7860, but the flowers in the plate are of a much rounder shape than those shown by Sir J. Ramsden at the R.H.S. meeting. They are a bright orange-salmon colour, and hybridists will doubtless find this Gladiolus valuable in transmitting its beautiful colour to hybrids by crossing it with other species. The flowering stem is very slender and grows about two feet high, bearing five to six blooms.

LILIUM HENRYI.

THIS is one of the very finest of all garden Lilies, and it became exceedingly popular immediately after its introduction from Western China in 1888. It closely resembles L. speciosum in the form of its flowers, and, indeed, for some time it was known as the "yellow speciosum," but it differs considerably in botanical details from that delightful species.

L. Henryi is not fastidious as to soil or situation, and although it will succeed in full sunshine, it prefers a half-shaded situation. A goodly proportion of peat and leaf mould should be added to the soil. An abundance of moisture is required by the roots during the plant's season of active growth.

It is a species of unusual vigour, and will attain to a height of from six to twelve feet; this Lily grows very robustly when planted out under glass, and will bear from twenty to thirty flowers on a single stem. The blossoms are of a deep orange-yellow, the colour being greatly intensified by the unusually bright green foliage. The species flowers during July and August in the open and somewhat earlier under glass; it makes an excellent pot plant.

This Lily is long-lived, will flower freely the first season after planting, and will increase in size of bulb and vigour of growth yearly.

LILIUM HANSONII.

THIS handsome Japanese Lily belongs to the true Martagon group, its flowers being produced in whorls, as is the case in all Martagon Lilies. The plant attains a height of from three feet to five feet; the stem bears several flowers, which are regularly reflexed, and coloured bright orange-yellow, spotted with chocolate; the segments are of a wax-like texture.

Of very easy culture, L. Hansonii is one of the earliest of species to start into growth in the spring, and usually flowers from the middle to the end of June, being at its best with the Roses.

It succeeds admirably in a deep, well-drained loam, and it is as well to plant the bulbs among other plants or low-growing shrubs, these latter affording protection to the young growths in early spring.

A half-shaded position should be selected for this Lily, which makes an excellent pot plant. It is of great use for decorative work, especially as the sickly perfume of many Turk's Cap Lilies is absent in this species.

L. Hansonii readily accommodates itself to its surroundings, and will flower the first year after planting. *Ralph E. Arnold.*

SUMMER BEDDING PLANTS.

CELOSIAS.

These are some of the most useful and ornamental of summer-flowering plants, and a batch of well-grown specimens never fails to attract attention.

The colours of the feathery plumes range from pale buff to deepest crimson, and include rich yellow, old gold, carmine, and light red; the stems of the plants, when seedlings, give an idea of what the ultimate colour of the plumes will be.

To obtain large specimens the plants should be grown in gentle warmth until they are ready for putting in the beds and never be allowed to become pot-bound. If dwarfer specimens are required, the leading shoots may be pinched once or twice about a week or so after the plants are potted on, but very fine plumes may be had by growing them naturally and specimens three feet or four feet high may be easily obtained.

The seeds will germinate quickly in a moist, warm atmosphere; they should be sown in a light, sandy compost. So soon as the young plants are a couple of inches or so high, prick them off singly into small pots and place them on the shelf in a warm house to keep them sturdy. Water them carefully and the pots will very soon become full of roots, when the plants should be shifted into four-inch pots, using a compost of two parts loam, one part leaf-mould and one part old Mushroom bed manure, with a liberal quantity of sand and fine charcoal.

Some of the young plants are very precocious in showing their plumes; these may be pinched out if the cultivator desires bushy specimens, but the plants must be kept growing actively or they will become stunted.

Celosias are gross feeders and form roots rapidly even in a small state, therefore they may be fed with weak liquid manure at the second potting. The next potting should be into six-inch pots, using a slightly rougher compost, and the plants at that stage may be transferred to a warm frame, where they will grow very rapidly. They should be well watered and fed, using as an alternative to liquid manure weak soot water or an artificial fertiliser. The plants should be well syringed in the mornings and late afternoons of bright days. They are somewhat liable to red spider infestation, but this pest may be kept in check by feeding and syringing. So soon as they begin to show their plumes they may be removed to the greenhouse, and any that are growing tall should be staked and tied neatly. Continue to feed them lightly until they are in full flower, then give them clear water only. Although these plants need plenty of moisture they should never be watered indiscriminately, or they will droop and fail altogether. They should be looked over twice daily in warm weather and only those watered that require it. Celosias are very useful for making a display in the flower beds and are especially fine in hot summers. Not only are the stems coloured, but the foliage also is very beautiful as the plants reach maturity. They make splendid subjects for house decoration and will last in flower two or three months if carefully attended to. When in full flower specimens in glass-houses should be shaded from very bright sunshine, as the blooms are apt to fade and lose their lustre if exposed to the direct rays of the sun. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

HARDENING BEDDING PLANTS.

It is time to proceed in earnest with the hardening of plants used for summer bedding. Many plants are seriously crippled by exposure to cold winds immediately after they are taken from the pit or greenhouse, where they are frequently and unavoidably subjected to fairly high temperatures. They should be kept close in a cold frame for a few days, and be gradually accustomed to the admission of air in increasing quantity until they can withstand full exposure, when the lights may be removed entirely.

MIGNONETTE.

Plants raised under glass in pots may now be planted out at from twelve to fifteen inches apart. Seeds may also be sown in the positions where the plants are to flower.

Mignonette needs a firm soil, and the borders should be thoroughly consolidated before either planting out or sowing seeds. *W. Auton.*

HERBACEOUS PERENNIALS FOR SUMMER BEDDING.

It is generally agreed that the needs for adopting labour-saving devices in the garden are as urgent to-day as they were in the worst years of the war, and where satisfaction can be given by adopting methods suited to the times, it behoves those hard pressed to keep pace with everything to practise them.

The wintering and raising of half-hardy plants for bedding takes up valuable time and space which can ill be spared, in spring especially. For the adequate furnishing of formally arranged beds, there is not, it must be admitted in many cases, any alternative to the use of the general run of bedding plants, although since Antirrhinums became so popular, the necessary labour has been reduced considerably owing to the ease with which these plants may be raised, and the little time they occupy space in heated structures, compared with other suitable plants for the purpose. But for beds away from the parterre, and borders which call for countless tender plants, there is everything to be said for adopting labour-saving means of filling them.

Roses have helped many over grave difficulties of recent years, and cannot be too highly praised, and where Violas and other hardy subjects are made use of for carpeting the results over many months compare favourably with any scheme of summer or autumn planting.

Other labour-saving plants are Pentstemons and tuberous-rooted Begonias, and now that there are one or two more Dahlias of the Coltness Gem type available, they should prove useful in many cases where Dahlias hitherto have not been employed for bedding.

Coming to true hardy plants, the only disadvantage they have is where the beds have to be filled in autumn. But this difficulty is more apparent than real as, for instance, where bulbs are employed over a carpet of small plants such as Aubrietias, Daisies, or Myosotis, as none of these will impoverish the soil to any great extent or interfere much with the perennials. In any case they are ready to be removed in May, when a light covering of old manure forked carefully in the soil will replace all that has been taken out by the spring-flowering plants.

Where the beds have to be cleared in autumn for special planting, the perennials should be planted for the winter where they can be easily got at and prepared for lifting again by going around the roots with a spade and raising them slightly in advance, soaking the ground thoroughly, if necessary, at the same time.

Unqualified success depends upon planting again as soon as possible, the passing of the spring flowers being the signal for immediate action. If the work is well and expeditiously done there is no fear of failure in good soil if two-year or three-year old plants are used.

Amongst the plants which adapt themselves to this treatment Delphiniums are excellent for large beds, and it will be found that frequent removal tends to reduce their height a little, which in many cases is an advantage. Included amongst Campanulas are several of merit, the varieties of C. persicifolia in blue and white, being especially noteworthy, and they do not exceed three feet in height. The purple-flowered C. glomerata makes a pleasing groundwork for Gladioli, in fact the latter will be found an invaluable association for many other kinds, likewise Galtonia (syn. Hyacinthus) candicans.

Erigerons transplant well, and varieties growing about twelve inches tall, like Merstham Glory, violet blue, Beauty of Hale, mauve, and Asa Gray, buff, are very showy.

Chrysanthemum maximum in its different varieties will occur to most as being well fitted for the purpose in question, and if a few plants of the border type are mixed in with them, the bed will be made attractive over a very long period.

Coreopsis grandiflora treated as a biennial, as is usual, leaves little to be desired. For safety Gaillardias in many soils are best wintered in cold frames. Lychnis chalcedonica furnishes a bright display in scarlet, but the best subject in this desirable colour is Geum Mrs. Bradshaw. Here again Gladioli should be included for autumn flowering. Mention should also be made of the yellow Geums, of which Orangeman and Lady Stratheden are good examples. Perennial Asters are obviously indispensable, and varieties of medium height give the best results. Other plants which may, with advantage, be employed include Inulas, Helenium, Helianthus, Rudbeckias, Veronicas, and Phloxes, and these by no means exhaust the list. *Y. G.*

ALPINE GARDEN.

CAMPANULA PORTENSCHLAGIANA.

Portenschlag's Bellflower has been for many years in cultivation and has proved itself as entirely worthy of our appreciation, both for beauty and hardiness. This Campanula has also been called C. muralis, the Wall Bellflower.

It is a delightful plant, growing about four inches high and producing above its pretty glossey leaves a mass of large-sized, Violet-blue flowers. It is suitable for the edge of rockwork or front row of the border; it is lovely on shady or sunny rockwork and it is very beautiful in the wall garden, where, when once established, it appears to require a minimum of soil. I once saw a mass of it growing in the old mortar of a somewhat antiquated greenhouse, and very beautiful it was under such semi-starved conditions.

But the typical species has been overshadowed by the appearance of a variety known as the "Bavarian" one, although there is some dubiety as to the correctness of this title. However this may be, C. p. "Bavarian variety" is well known in the trade and is readily procurable by that name. It is of slightly larger and freer growth than the type, with finer flowers of a lovely violet-blue. The plant flowers with great freedom, and is valuable for depending from a wall or over a stone in the rock garden. It was, I believe, first known as Campanula mollis, and I met with it as this many years ago in a then famous garden, although at the time the name of mollis was viewed with some suspicion.

Neither of these plants is fastidious regarding soil, as may be gathered from what has been stated above, and I have found them do well in both sun and shade. In shade they seem to be longer in flower.

Both may be raised from seeds or increased by division or cuttings. Were I limited to one of the two I should certainly prefer the "Bavarian" variety. *S. Arnott.*

PRIMULA ROSEA.

Primula rosea, and its varieties grandiflora and splendens, are amongst the earliest of the Primulas to flower in the bog garden. While not approximating in stature to its congeners P. helodoxa and P. japonica—whose yard high tiers will furnish a gay riot of colour in the drier portions of the bog-garden later in the season — P. rosea is particularly effective when planted in irregular drifts bordering a path. It is dwarf in habit and flowers simultaneously with the development of the smooth, pale green foliage. The flowers are bright carmine-pink, with a yellow eye one inch in diameter, and they are fragrant. *Fred W. Jeffery.*

HYPERICUM FRAGILE.

Hypericum fragile is one of the best members of the genus for the rock garden. The comparatively large, clear yellow flowers are produced at the extremities of wiry, prostrate stems, these latter being densely furnished with small, Heath-like leaves.

The plant produces its flowers over a very long season, for the greater part, indeed, of the summer and autumn, and will quickly cover a considerable area, but it is by no means obtrusive.

A well-drained, loamy soil in full sunshine is suited to this plant, and if it is allowed to ramble around and over a large stone its charms will be displayed to the best advantage.

This Hypericum is most easily propagated from cuttings. *R. A.*

TREES AND SHRUBS.

VIBURNUMS.

The Viburnums constitute a group of easily grown, early summer-flowering shrubs which succeed in almost any soil, but pay for good cultivation, and if treated liberally, and planted in an open, sunny position, they flower profusely in May and June. Many of them are also very attractive in autumn on account of the colouration of their foliage, and are useful subjects when planting for autumn tints.

The wild form of V. Opulus has only the outer row of flowers sterile and enlarged, but in the familiar cultivated one known as var. sterile all the flowers are transformed, making the flower-heads into white balls. The wild type, however, has much more charm in the autumn, when its bright red fruits are very attractive.

V. Lantana is another indigenous shrub, often reaching a height of twenty feet. It bears flat, terminal cymes of white flowers in May and June, and its black, flattened fruits persist well into the winter.

V. plicatum, the Japanese Snowball tree, is a particularly handsome shrub, and is probably the most useful of all the Viburnums for garden decorative purposes. Although not exacting as to soil, it succeeds best in a medium loam rich in humus. It is well suited for planting in bold groups in open, sunny positions, and in June, when its large clusters of snow-white flowers are expanded on the short spurs along the stiff growths, few subjects are more attractive.

V. macrocephalum has enormous heads of sterile flowers like the common Guelder Rose, but it is not quite so hardy, and should be planted in a sheltered position beyond the reach of east winds, and in a well-drained soil.

V. prunifolium has Plum-like leaves, flowers towards the end of May, and bears black berries in the autumn.

V. Tinus is the only evergreen species of the genus in general cultivation, and is one of our most valuable winter-flowering shrubs. It flourishes in almost any soil and position, and has given rise to several varieties, none of which is superior to the type.

V. Carlesii, a comparatively recent introduction, is a most beautiful species, and although not quite so free-growing as some others, its exquisite, Bouvardia-like fragrant flowers make it a great acquisition.

Several of the Viburnums make excellent forcing plants, and are very useful for house and conservatory decoration in the early months of the year. For this purpose they should be lifted in the autumn, placed in pots of suitable sizes, and plunged in ashes in the open. They may be introduced into heat as required. The propagation of Viburnums may easily be effected by means of layering. Several of the species also strike readily from cuttings of ripened wood inserted in early autumn. *W. Auton.*

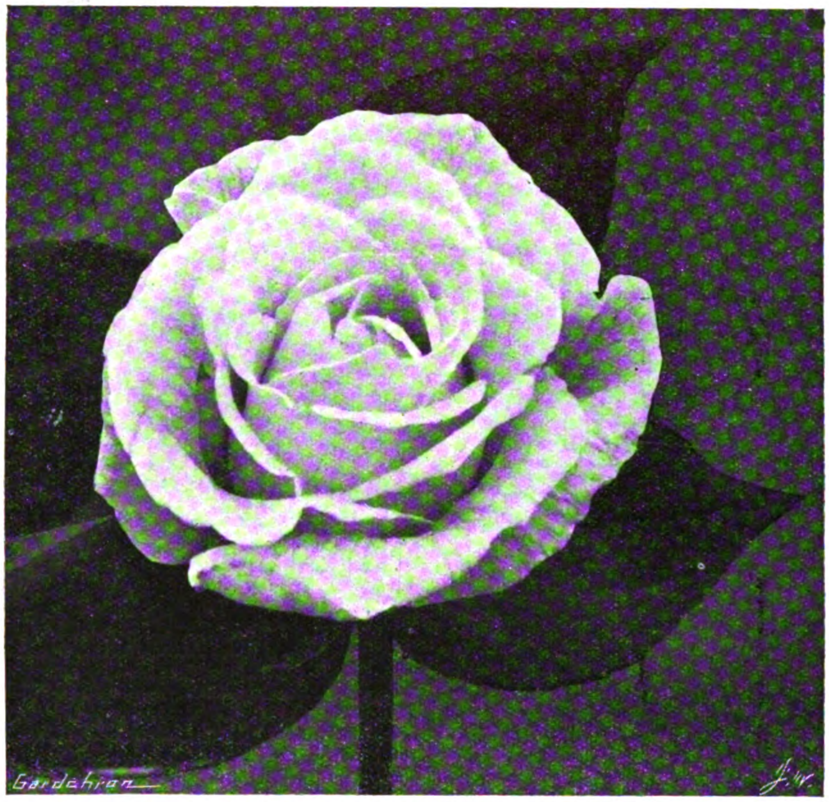

FIG. 121.—ROSE ROSELANDIA.

A beautiful yellow variety awarded the R.H.S. Award of Merit on April 21, and the National Rose Society's Certificate of Merit on April 24 (see p. 306).

INDOOR PLANTS.

TETRANEMA MEXICANA.

In general appearance the Mexican Foxglove bears little resemblance to its European namesake. The delicate five-cleft, Violet-coloured flowers of Tetranema mexicana swing on slender pedicels at the apex of a fleshy peduncle but some few inches high. Yet, numerically, the flowers may exceed those of a six-feet high Digitalis. The flat, loose, many-flowered inflorescences are freely borne, arising from the axils of the opposite, obovate, crenately-margined leaves, with the intervening internodes so short as to give them a whorled appearance.

This warm greenhouse herb thrives in a light, open compost, and when established in small pots will flower from early spring onwards. Like other members of the Scrophularineae it is a prolific seed bearer. Seeds germinate freely, and afford a ready means of increase. *Fred W. Jeffery.*

HIPPEASTRUMS (AMARYLLIS).

Bulbs which were newly-potted this season should now be making growth freely, and will require an increasing amount of water at their roots. Newly-potted bulbs, which may have been allowed to flower, should have the spent flowers removed from them so soon as possible. Do not cut away the flower stems, but simply break or cut off the flowers at the base of the peduncles, leaving the thick flower stems to dry off naturally.

Keep the plants growing in a moist, warm atmosphere, damping the floor and walls of the house frequently on warm days. A little air should be admitted to the house in the mornings, when the temperature has risen to about sixty-five degrees, gradually affording more ventilation as the temperature rises with the increase of sun-heat. Close the house sufficiently early in the afternoon to allow the temperature to rise by sun-heat to eighty degrees to ninety degrees. Syringe the plants and the whole house at closing time, using soft or rain water at a temperature higher than that of the house itself.

Established plants which have been undisturbed by potting this year, and have flowered, or are flowering, will not necessarily have needed so warm a temperature. They will require much more water than the newly-potted plants and will be benefited by applications of liquid manure as the flowers are developing. In this case, also, the flowers should not be left on them longer than is absolutely unavoidable.

After flowering is over the plants should be given every encouragement to develop and build up good bulbs, by feeding them liberally with liquid manure, affording them a moist, growing atmosphere, and by syringing and closing the house early in the afternoons as advised in the case of newly-potted plants. *F. J. Clark, Westonbirt Gardens, Tetbury.*

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SELF-STERILITY IN RHODODENDRONS.

FROM time to time the question of self-sterility in Rhododendron species has been raised, and it is well known that a solitary plant will often fail to set seed even after the most careful pollination, while in other gardens the same species fruits abundantly. In similar cases it has been suggested by careful observers that pollen taken from the opposite side of the same plant is more effective than that from the same flower.

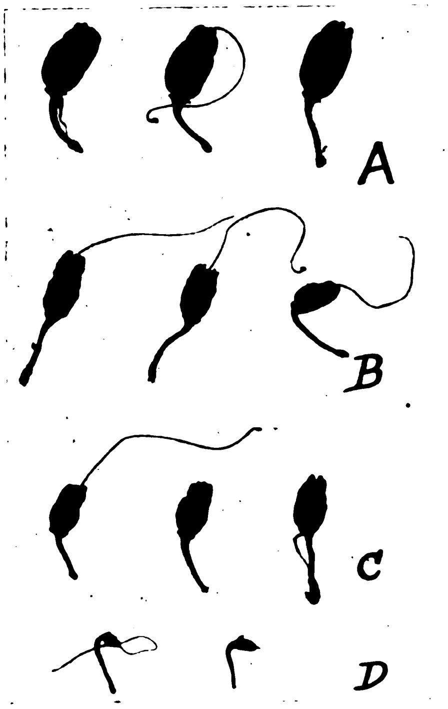


FIG. 122.—RHODODENDRON ACUMINATUM.

(A) pollinated from a distinct plant of the same species; (B) pollinated from a distant flower on the same plant; (C) pollinated from same flower; (D) control of emasculation (nat. size).

Perhaps an account of the following experiments, conducted in the Rhododendron House at the Royal Botanic Garden, Edinburgh, may help those interested in the subject.

Casual cross- and self-pollination was carried out in 1923 in order to ensure seed of as many species of Rhododendron as possible. The results were most unexpected, for, while seeds were obtained from many, others that had been carefully self-pollinated eventually dropped all their capsules. In no case was any failure recorded where pollen from a distinct individual of the same species had been used. On the contrary, nearly all the capsules were of exceptional size, even on the plant where self-pollination had failed entirely.

Some species, which may be considered sufficiently isolated by reason of position, lack of affinity, or date of blooming, set a fair quantity of good seed. These were: R. acuminatum, R. Aucklandii roseum, R. barbatum, R. brachyanthum, R. camelliaeflorum, R. campylocarpum, R. floribundum, R. heliolepis, R. hypoglaucum, R. Keysii, R. Kingianum, R. longistylum, R. neriiflorum, R. Nuttallii, R. oleifolium, R. polylepis, R. racemosum, R. spinuliferum, R. triflorum, R. villosum.

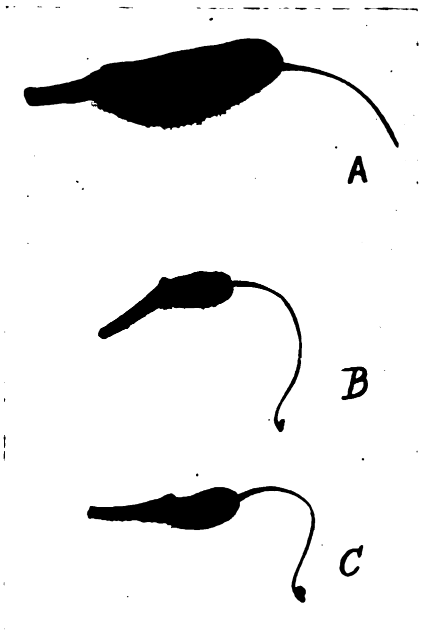


FIG. 123.—RHODODENDRON ARGENTEUM.

(A) Pollinated from a distinct plant of the same species; (B) pollinated from a distant flower on the same plant; (C) pollinated from same flower (half nat. size).

Others, such as R. arboreum album, R. argenteum, R. Hodgsonii, and R. lochmium produced only a few capsules with a few good seeds in each.

Absolute failures were R. arboreum, R. ciliicalyx, R. fulgens, R. irroratum, R. lutescens, and R. Thomsonii. On the other hand, R. arboreum ♀ × R. arboreum album ♂, and the reverse cross, produced large capsules containing approximately 600 seeds each, while out of several trusses selfed on both plants, only sixteen seeds in one capsule of R. arboreum album matured. These sixteen seeds failed to germinate, although a high percentage of germination was obtained as a result of the other crosses. R. decorum and R. irroratum also responded fully to cross-pollination, the former always failing when selfed and covered.

Last year a definite experiment was carried out to ascertain the respective values of cross- and self-pollination, and in selfing, when pollen from the same flower is used in contrast to pollen from a distant flower of the same plant.

R. acuminatum (Hort), a variety of R. mucronulatum, which belongs to the Dahuricum series, was the first subject. This plant had always produced plenty of seeds. Here, a number of unopened flowers of equal age were carefully emasculated and covered, and were subsequently pollinated as follows:—

- (A) Six blooms were crossed with a practically identical plant of the same species. All developed large capsules, as shown in A, Fig. 122, containing an average of 396 good seeds and fourteen half-developed ones. These seeds were all much lighter in colour than those in succeeding capsules, possibly due to some factor introduced by the male parent.
- (B) Six blooms were pollinated from distant flowers on the same plant. The resulting capsules grew more slowly and averaged seventy-four and fifty-seven light seeds—less than one-fifth of the number of good seeds produced by the cross-fertilisation in group A.
- (C) Another six blooms were covered without emasculation, but were definitely pollinated on the same day as the preceding, with pollen taken from the same flower. Their capsules developed equally with the last, but two were afterwards lost, so here the average is for four only: sixty-seven good seeds and seventy-seven light seeds.
- (D) Several flowers were left unpollinated as a test of the emasculation, and none showed any signs of having been fertilised.

The illustration (Fig. 122) shows the largest and smallest fruit of each group.

All the capsules contained good seeds, and ovules that had been increased to nearly the same size, but contained no embryos, and minute ovules in varying proportions. It will be noticed that the half-developed seeds were many times more numerous in the self-pollinated groups B and C. This suggests that where pollen of less potency was used, not only were fewer ovules fertilised, but either the resulting pro-embryos were not all vigorous enough to mature, or the general stimulus of pollination was weak, and did not induce the flow of a sufficient food supply to the young fruit.

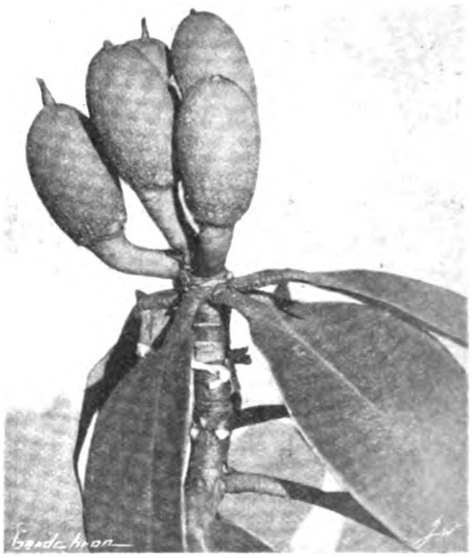


FIG. 124.—RHODODENDRON MADDENII.

Pollinated from a distinct individual of the species.

Since every stigma was covered with pollen till it would retain no more, the variation in number of seeds could not be due to imperfect pollination.

R. argenteum was the next subject, and here a similar series was emasculated and pollinated. Trouble was experienced owing to the large amount of nectar secreted, which caused the stamens and style to damp off, and also to a weakness at the base of the pedicel. Eventually, three of each group remained, average specimens of which are depicted in Fig. 123.

Groups B and C were fairly uniform, but the fruits in group A, fertilised by pollen kindly supplied by Messrs. R. Gill and Son, of Falmouth, grew enormously, and, when ripe, contained an average of 2,550 good seeds. B averaged 104 good seeds and C 120 seeds. Half-grown seeds were almost entirely absent from the series.

A truss of R. Maddenii was crossed with another form of the same species, and every flower developed a vigorous capsule. Five of them were allowed to remain, and are shown in Fig. 124. A similar truss was selfed, but all dropped off after six weeks. Fig. 125 depicts one capsule from each truss; A contained approximately 3,500 good seeds and B none at all.

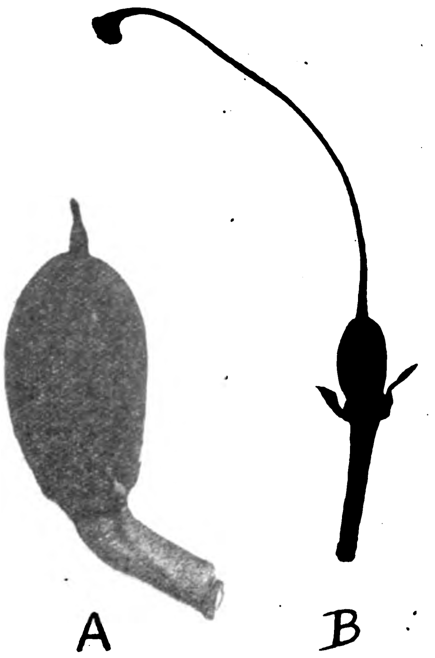


FIG. 125.—RHODODENDRON MADDENII.

(A) Pollinated from a distinct plant of the same species; (B) selfed (nat. size).

R. decorum, exemplified by several plants, has failed to produce seed whenever flowers have been kept covered and selfed, although inter-crossing has been entirely successful. This species sets seeds spontaneously out-of-doors, and under glass, but here cross-pollination is undoubtedly effected by bumble bees, attracted by the large, fragrant flowers.

A glance at the next illustration (Fig. 126) shows the relative sizes of the crossed (A), and selfed (B) ovaries of R. decorum, when the latter fell off at the age of two months. Similarly R. arboreum crossed R. arboreum album (C), and selfed (D), are shown one month after pollination.

It will be noticed that the balance in favour of a distant flower of the same plant as pollen bearer in R. acuminatum is outweighed in the experiment with R. argenteum, and possibly the only advantage gained is that of a fresher pollen, as most Rhododendrons are more or less protandrous.

It would appear that in the genus there is a gradation from total self-sterility in some individuals of certain species, such as R. arboreum, R. decorum, R. Maddenii, through intermediates such as R. argenteum R. Hodgsonii and R. lochmium, to the normally self-pollinating R. camelliaeflorum, in which every flower is succeeded by a full capsule. Also, the fruiting capacity of plants varies according to age, soil, temperature and atmospheric conditions, and it may be that, affected adversely by one or more of these factors, a normally self-fertile Rhododendron requires the additional stimulus gained by crossing before it will set seeds.

It is possible that some of them are always self-sterile, the production of a limited number of capsules of vigorous seed lessening the strain on the parent plant and giving to the seedling a better chance of developing under natural conditions which, we are led to believe, are often far from ideal.

Since the foregoing experiments show definitely that cross-pollination in the genus is often the deciding factor in the production of seed and is always beneficial, it should be practised when seed of a shy-setting species is required. Pollen should be taken from a distinct individual, not merely from another plant which may have been propagated vegetatively from the same stock, and is therefore only part of the same individual; but from one which exhibits any of the small variations from the type so common among plants raised from seeds.

The certainty of cross-pollination is well shown in the last photograph (Fig. 127)—R. arboreum album ♀ × R. arboreum ♂—where every flower in the truss produced a large fruit, while on the other hand, no seed was obtained from a similar truss that was selfed.

Since Rhododendrons are so prolific when cross-pollinated, one can always reduce the number of fruits and yet be sure of plenty of seeds. *H. F. Comber, Royal Botanic Garden, Edinburgh.*

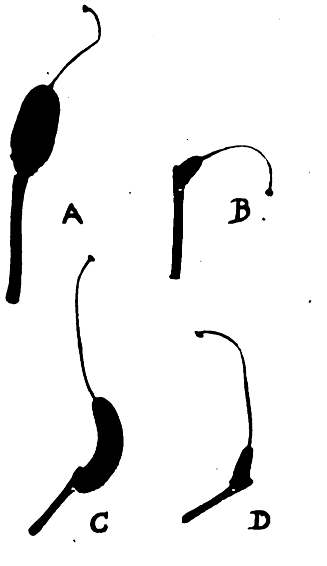


FIG. 126.—CAPSULES OF RHODODENDRON DECORUM AND R. ARBOREUM.

Capsules of R. decorum, two months old. (A) Pollinated from a distinct plant of the same species; (B) selfed.

Capsules of R. arboreum, one month old; (C) crossed with R. arboreum album; (D) selfed (half nat. size).

A FEW "BEST" PLANTS.

AMONG the catalogues which reached me this season was one which bore across its cover the unusual inscription

"The 1,001 Best Hardy Plants"

The catalogue was so far true to its declaration that it contained in numerical sequence the names of 1001 subjects, and there was no question about the all-round excellence of the collection. To claim, however, that even to the odd one nothing included could be surpassed in merit by any plant omitted would be folly, for one might in ten minutes suggest half-a-dozen changes which would be almost unanimously approved by qualified plantsmen.

When discussing popular races of plants which embrace many garden varieties, as, for instance, Delphiniums, Bearded Irises, Paeonies, or Phloxes, my contention would always be there is no "best" variety among them. Neither is there a best genus or best species, but it may certainly be claimed that a limited number of hardy plants in general cultivation are possessed of such outstanding and exceptional merit that they may be unhesitatingly recommended to all who are desirous of gathering together a selection of the best plants for the garden, and it may be profitable to draw attention to a few of those that should occupy an early place in any list.

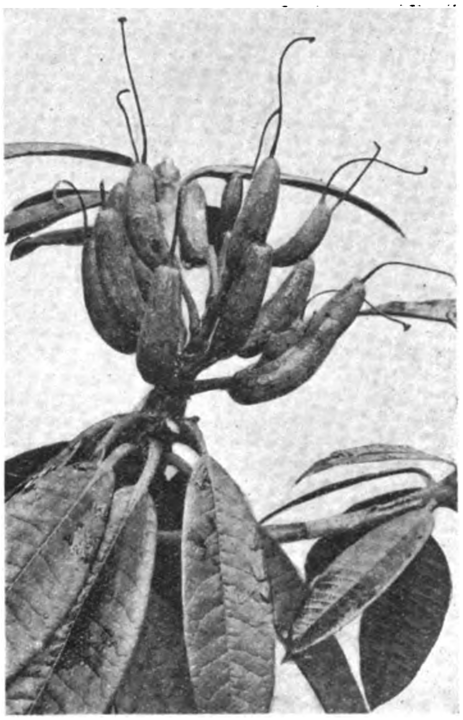


FIG. 127.—RHODODENDRON ARBOREUM ALBUM ♀ × R. ARBOREUM ♂

Showing vigorous fruiting obtained by crossing.

No effort is made—for it would be utterly futile—to place the plants selected in any consecutive order of merit, but since a start must be made somewhere it shall be with a plant of quite small stature but exceptionally great merit—Aethionema armenum "Warley Rose." In front of a sunny border, planted among old mortar rubble, burnt clay and sand, with a fair amount of softer compost, the plants with their grey-green foliage will branch out like Candytuft, and the clear, rose-pink flowers are borne with a profusion equalling the more robust Alyssums. The plant is, of course, an ideal subject for the rock-garden, and it is difficult to imagine that anyone seeing an established plant in full bloom between late April and early June could refrain from rapturous comment.

Pentstemon heterophyllus is another comparatively dwarf plant of unique charm. Sub-shrubby and of low, spreading habit, young plants require a couple of years in a loamy soil rendered porous with grit, in order to render a good account of themselves. The flowers are then produced in unlimited quantity for a very long period; indeed, from the same batch I have known bunches cut for almost weekly shows between May and October. The colour is founded upon cobalt blue, but a suffusion of rosy tints melts into the blue and a peculiar steely sheen covers the whole with almost a phosphorescent lustre. Pentstemon heterophyllus should be as largely in demand as the ubiquitous Nepeta Mussini, which is so excellent as an edging plant, being in bloom the summer through.

Still another dwarf plant which belongs to the "Best Plant" category is Potentilla Gibson's Scarlet. Not even the most vivid forms of Anemone fulgens can outdo the brilliance of this Cinquefoil; but few garden plants can equal its industry in blooming. Well in bloom before one dares to plant out Pelargonium Paul Crampel, the admitted king of the bedding Zonals, Potentilla Gibson's Scarlet vies with it throughout the season, and a few of the bright-eyed blossoms will witness the mournful passing of the Pelargonium when the icy hand of frost has dealt its stunning blow. Over the vermilion carpet of Potentilla blossoms the chaste spikes of Anthericums were never more entrancing, and this may afford a hint as to the association of these two good plants.

Campanula persicifolia Telham Beauty is so superior to the rest of its tribe that half the older forms and varieties of C. persicifolia should be eliminated; another Campanula to enthuse over is C. lactiflora, but it needs to be a seedling of a first-class form, planted in the very young seedling stage, and thenceforward left undisturbed except for the purpose of freshening up the surface soil and top-dressing with a good fertilizer. In a midland garden of my acquaintance single plants attain a height of six feet and a circumference of twenty feet, the whole area being one immense, fountain-like cascade of daintily tinted, starry blossoms.

Gaillardia Mrs. J. McKellar is one of the best border flowers available, and of unequalled glory within its own brilliant family. Unfortunately, this variety, like that wonderful Geum Mrs. Bradshaw, has been so greatly in demand that some traders have distributed seedling stock which betrays some recedence from the true character of the original, but from the leading hardy plant specialists whose names it is unnecessary here to mention, the true stock is obtainable.

For a dwarf, compact, golden-yellow flower, I know nothing quite so good as Linum arboreum. It is an old plant, and the one point that is difficult to understand is why it is absent from so many gardens. There are, it is true, some cold, wet soils, and some bitterly cold, exposed situations, where it is not easy to keep the plant beyond the second year; it really needs a third and fourth year's development to secure its full glory, but lime rubble and burnt earth are again the safeguard on wet soils, and a few branches of Yew securely fixed in the ground around the plants in winter afford protection enough in the most windswept gardens.

Salvia virgata nemorosa is a plant which may or may not appeal strongly at first sight. Personal taste is a variable factor in these matters, but age, condition, and environment of the plant under notice has more than all else to do with the degree of appreciation with which it is greeted. A small plant in its first season does not produce a very striking effect. Growing in close proximity to blue or purple Lupins it scarcely shines to the greatest advantage, nor does it require Nepeta Mussinii closely in front of it. Those who extol the charms of "Blue" gardens may disagree on that point, but there again concession must be made to personal taste; I like my true blue flowers to stand out boldly in a setting of sulphur or lemon-yellow, and my rich, full, purple-blues to likewise stand in contrasts, although I equally admire blendings of the mauve-blues, the lavender-blues, and the lilacs.

A row of Salvia virgata nemorosa which had been three years *in situ* backed by the lemon-yellow Althaea ficifolia, with several stems of medium height per plant, and Anthemis tinctoria in the foreground, impressed me last year as being quite apart from the ordinary run of herbaceous border plants. The spikes of flowers were uncountable in their multitude; the blue-purple of the flowers proper was wonderfully rich, and the bracts were of a redolent shade which one sees in tawny port poured out in a good light. Those plants bloomed with the utmost freedom from early June right through to October, the freedom with which flowers were cut prolonging the period of blooming. It is one of those plants which will grow practically anywhere, but succeeds best where its roots are in strong, moist soil and its herbage in full sunshine.

Of Kniphofias there are so many varieties that one may speak of favourites rather than be dogmatic in proclaiming any one to be the best. My favourites are Corallina, practically a self-coloured flower of a tint between coral red and Tangerine orange; the Beecroft variety of K. aloides, a giant, and late flowering, and Royal Standard, the combination of yellow and scarlet making a very striking flower. These Kniphofias seem never ending in their season of blooming, for they carry the season of bright garden flowers almost into early winter.

Anemone japonica Louise Uhink may uphold the claim to be the best of a highly meritorious group of autumn-flowering border plants except in the eyes of those who dislike any departure from plain, single flowers. The variety Louise Uhink is large, and approaching the double flower, but it is not ungainly, and it has a distinct advantage in its powers of duration.

Gentiana Purdomii is decidedly a "best" plant for whomsoever wants a Gentian that will grow without whining and pining for special nursing and continuous watching. If one has not a rockery it will grow quite well in front of the herbaceous border, the only necessary precaution being to mulch the ground under the plants with perfectly clean shingle, the object being to prevent the prostrate flower stems from becoming bespattered with soil whenever a sudden rainstorm happens. The tubular flowers are arranged closely along stems of about one foot in length, and are as freely produced as those of any Campanula. Geum Borisii claims my affection both on account of its wonderful orange-scarlet flowers, and their smooth, open countenance. Every blossom seems anxious to reveal the utmost of its bright cheerfulness. The Geums are glorious plants for the garden, as they extend their flowers over the whole period when the flower garden is most enjoyed, which is probably one reason why Geums Mrs. Bradshaw and Lady Stratheden are planted so extensively.

The last plant I will deal with, not by any means because the list could not be indefinitely extended, is another old favourite, Oenothera missouriensis. Probably the reason it is not abundant is that good seed is but irregularly procurable, and seed is undoubtedly the correct means of reproduction. I have succeeded in rooting cuttings of young growths taken from the crown, but the plants have never attained the vigour and spreading habit of seedlings. The charms of the plants are manifold, not only in the large, uncommonly pure yellow blossoms, but in the narrow lanceolate leaves with their silky surface, the rich red stems, the pretty seed capsules, and in the coral-like brightness of the young sprouting growths in early spring.

I have purposely skipped over such plants as Thalictrum dipterocarpum, Aster Amellus "King George," the double Gypsophila, Incarvillea grandiflora, and other universally acclaimed plants because it would be but repeating a familiar and oft-told story to tell of their merits, and my purpose is rather to call attention to plants which have not received quite their due share of publicity, but which should not be overlooked when making selections of really serviceable plants. *A. J. Macself.*

TIMBERS OF ANCIENT LONDON.

DURING excavations in connection with drainage and building schemes, many ancient remains of native timbers have been brought to light in various parts of London. Some of these, particularly in connection with the original embankments of the Thames, are of early date, others being of a later period, but all are of considerable interest on account of the various kinds of timber that were used, as well as the remarkable state of preservation of some of the timber.

Specimens of wood-work, in the form of water-pipes, piles, bridges, and planking have often been brought to light in our own days, records of some of which have appeared at the time of discovery. During excavations in connection with one of the London docks, unusually well-preserved examples of Yew and native Pine were unearthed at a depth of about ten-feet, and from their position appeared to be lying where they were felled or blown down. In both cases the bark and some of the branches were attached. A portion of each stem was sawn into half-inch boards, and when planed and polished the beautiful, warm colour and delicacy of graining of the wood were much admired.

Only a short time since I was asked to inspect several sections of a water-pipe that had been taken from a London street after having been in use for upwards of three hundred years. Three sections were preserved by a City alderman, and attached to one of these is a brass plate with the following inscription:—"Section of water-pipe laid by Sir Hugh Middleton, 1609-1613." The Elm tree trunks from which these were cut were eighteen-inches in diameter, the borings varying from four-inches to six-inches in diameter. The timber is to-day in as perfect a state of preservation as when buried underground fully three centuries ago.

Amongst other examples that I have had an opportunity of examining, those from the Tower district and Roman London were by far the most interesting. Very few of the wooden houses that existed in London at the time of the Great Fire (1666) are now standing, and though Sir Walter Besant makes mention of one as being in the churchyard of St. Giles, Cripplegate, recent search has not been successful in bringing it to light. Of the 13,200 houses destroyed by the fire, which started in a baker's shop in Pudding Lane, by the Thames side, most were pitched throughout, and some of the charred Oaken beams were pointed out to me a few years since in a building that was being demolished in close vicinity to the Monument.

Amongst the last of the old wooden houses, were those pulled down in 1924 by Cloth Fair Street, adjoining the church of St. Bartholomew the Great. They were built of several kinds of wood, including a few Oak beams, but mostly Pine and Spruce. The bank of the Wallbrook revealed piles of timber, and a fragment of a bridge over the stream is preserved in the Guildhall Museum.

In connection with the approaches to the new London Bridge, in the parish of St. Michael, Crooked Lane, large quantities of native timbers were brought to light. The first embankment, on the south side of Thames Street, was formed of large, solid trees of Oak and Chestnut, roughly hewn, and about two-feet square, whilst lower down the river, at Dagenham, the original embankment was also formed of large trunks of trees, Yew having been used instead of Oak. At a depth of twenty-feet, a line of timbers was also found, the Yew only being in a sound condition. The Yew trees were of large size, from fourteen-inches to sixteen-inches in diameter, and perfectly sound except the sapwood. Willow trees were also found, some being two-feet and upwards in diameter.

In 1826, excavations in Tooley Street revealed in the peat, Hazel trees and nuts, the latter quite sound; also Oak and Beech wood, both black and hard as ebony. Between Thames Street and Crooked Lane, a large number of strong Elm piles, eight-feet to ten-feet long, closely driven together, were brought to light. Only once have I seen Larch timber unearthed in London, and that in connection with a water supply abutting Southampton Row. Parts of a bridge and sluice on the Tyburn stream were shown to me a short time back, but the timbers were for the most part in a decayed condition. *A. D. Webster.*

HARDY FRUIT GARDEN.

RIPE WOOD AND CROPS.

Market Grower must be a man of exceptional courage or he would not dare to question, as he does on page 272, the intimate association between ripened wood and flowering in fruit trees. He is not, however, alone in his conclusion that there is little, if indeed anything, in the old theory that unless the wood is properly ripened before winter there can be no crop in the ensuing year. That neither the presence nor the absence of late summer or early autumn sun has the slightest influence on fruit production is seen when the subject is submitted to such deliberate consideration as that of your correspondent. The flower buds, essential precursors of the next year's yield, are in process of formation from the spring onwards to the autumn. If they receive sufficient nutrient matter from start to finish they will build up their organs perfectly, irrespective of whether there is much or little sun. It is, of course, true that perfect buds do not necessarily spell fruit—unfavourable weather at blossoming and uncontrolled attacks of pests may intervene to cause failure—but in their absence crops are impossible.

The governing factor in perfect flower bud development seems to me to be nutritional. The excessively burdened tree has so many seeds to finish, in obedience to one of Nature's primary laws, that insufficient nutrient materials remain for the proper sustenance of the developing blossom buds, and they do not attain to perfection; hence, I believe, the ungracious and unnatural habit of bearing in alternate seasons. If the food supply could be divided so accurately as to meet the full demands of swelling fruits and developing buds, annual bearing would follow, but there are difficulties of knowing what is an adequate supply and of assuring that it shall be assimilated regularly. The former problem could, doubtless, be solved, but the latter is so largely dependent on the weather in outdoor culture that it appears to be beyond solution. Varieties of Apples which are notoriously alternate-year bearers out-of-doors crop annually in pots under glass under good management, and this seems to me to support the assumption that correct feeding is a first necessity—in pot culture it is within the grower's control, in open ground culture it it not.

Overcropping at all ages is a most dangerous evil, but especially so while the trees are young, because it may then create a habit of alternate-year bearing which may become a permanent characteristic. Most gardeners have rules in respect of thinning which they apply according to conditions, and alternate-year cropping is not nearly so pronounced a feature in their case as it is in commercial places where thinning is either not done at all or receives no better than perfunctory attention. This, too, goes to confirm the view that food is the first consideration, for it is well known that it is the seeds and not the flesh of fruits which make the largest and most insistent demands on the tree. Then again, the private grower can devote individual thought to individual trees, whereas the commercial grower must, speaking widely, treat all his trees alike. It is surely as unreasonable to suppose that two Apple trees will, of necessity, flourish equally on the same diet as it is to suppose that two human being will, of necessity, flourish equally on exactly the same foods. *W. T.*

APPLE LEAF SCORCH.

With reference to the article on "Apple Leaf Scorch," which you were good enough to publish for me in your issue of April 18, page 273, there are two errors, which I should be obliged if you would correct, viz.:—(1) page 273, column 3, paragraph commencing "The essence of this argument . . . etc" The word "about" in the last line of this paragraph should read "above." (2) page 273, column 3, paragraph commencing "In this connection . . . etc." The percentage given as "0·181%" should read "0·0181%." *T. Wallace, Long Ashton, Bristol.*

POTATO BREEDING.

From the remarks on this subject on pp. 256 and 257, I believe a few years' work on practical breeding will show Mr. McIntosh that improvements to our modern Potatos are not so easily obtained as he imagines. There is certainly a limitation, he writes, in Potato breeding, but this is by no means reached. I am glad to observe that he is so optimistic on this point, and if he is indeed actively engaged in the work of raising new Potatos I most sincerely wish him every success, and that he will have something substantial to show for his labours. He will find, however, that he is engaged upon a most difficult proposition. The experiences of practical breeders of many years' standing are not negligible, and unless new blood be introduced I fail to see where or how progress can be made.

Mr. McIntosh is aware that numerous breeders send worthless seedlings to the official trials, and he remarks that feeble efforts do not condemn a system. The work, then, of those numerous breeders can only be characterised as "feeble efforts," and yet this is the work which resulted in our present-day race of Potatos. When Mr. McIntosh gives us a variety bred from any sorts that are now in commerce, and which is an undoubted improvement upon any of them, I shall be the first to congratulate him. The fact that so many, alleged, old sorts are now found amongst seedlings which gravitate to the official trials simply confirms my contention that the most breeding can now do is to create replicas of sorts already under name. This is also the experience of the raiser of Sweet Peas and Violas.

Mr. McIntosh asks me what can be expected from the assimilation into the Potato of wild Solanum blood? I reply "nothing." That avenue has already been explored for all it is worth; surely he is aware of the work done in this direction by the late Mr. Arthur Sutton and Mr. Aikman Paton. Mr. McIntosh will discover, sooner or later, that the ground has been well tilled, and there is little to be done. Research must now lie in fresh blood; get that introduced and we can go ahead producing new and improved varieties of Potatos.

I am afraid that Mr. McIntosh has but little experience of early Potatos when he writes: "It is merely a matter of time until someone will produce a fresh early variety with the cropping capacity of Epicure, with a finer tuber and probably with other virtues thrown in." I think it is common knowledge that breeders have been working for the past thirty years to get precisely what he considers they will get in time! In a word, it cannot be done as things are at present, and I have tried to state the cause. Duke of York, too, still holds its position. First early Potatos are weaklings, and as such are prone to every disease known to the tribe.

I am obliged to Mr. McIntosh for his definition of the word "bolter." I was present when a well-known Scottish authority coined this word over a variation which was discovered in Great Scot. That particular "bolter" is an improvement over its parent, and the curious thing is that it arose asexually.

I should like to close by reminding Mr. McIntosh of a story told by Professor Bateson when proposing the toast of "Hybridists" at the International Conference on Hybridisation, held in London in 1899, under the auspices of the Royal Horticultural Society: "There was once a society," he said, "that existed for the purpose of mending the clothes of the poor—darning, and sewing on buttons, and so forth. Once an Irishman, of whom you may have heard, came to that society with a button in his hand and said: 'If you would be so good as to sew a shirt to this button I should be very much obliged.'" That, said the Professor, "is like science and practice in horticulture. Science produces the button, but practice has to bring the shirt." *George M. Taylor, Edinburgh.*

HOME CORRESPONDENCE.

Seeds of Galanthus nivalis and Narcissus pseudo-Narcissus.—The correspondence in *Gard. Chron.* last year as to whether the common Snowdrop (Galanthus nivalis) reproduced itself from seeds, left the question, so far as I can remember, in doubt. I have much pleasure, therefore, in inclosing for your inspection a quantity of seed pods of Galanthus nivalis picked to-day, and of which there are large numbers this season. If these seed pods were ripened, and the resultant seeds (if any) sown by some unbiased cultivator, say either at Kew or the Royal Horticultural Society's Gardens at Wisley, the evidence so obtained should be uncontrovertable. One reason why the seed pods may easily be overlooked is because they are proportionately heavy to their slender footstalks, and the latter are usually bent down until the seed pods rest on the ground and are hidden from view by the plants' own and other herbage. On this account also they may never get a proper chance to ripen their contents, beside the seeds running the risk of being devoured, if they should ripen, by some of the denizens of the woodland. While on this subject of seed production I may state that among the millions of Daffodils (Narcissus pseudo-Narcissus) growing here, it is one of the rarest things to find a seed pod, although the better forms of Narcissi carry seed pods freely. I do not know if this is the case everywhere, but it does seem strange that what is probably our native form of Narcissus, or at least one of the oldest forms introduced to this country, should not now reproduce itself in this natural way in our woods. Another curious feature which may have a bearing on this lack of seed in the Daffodil is, that I have never observed a bee of any variety, or kind, visiting them. *A. T. Harrison, Culzean Castle Gardens, near Maybole, Scotland.*

Late Chrysanthemums.—It may be of interest to note that we have Chrysanthemums still in bloom, and several healthy flower buds freely developing, some of which measure from five inches to five-and-a-half inches across. This late blooming I attribute to late growth of the old flowering-wood. Cuttings of these Chrysanthemums were inserted as usual from December to the end of January. *J. W. Blackney, Midleton Lodge Gardens, Eastbourne, Sussex.*

HAARLEM INTERNATIONAL EXHIBITION.

As already stated on several occasions in these columns, our Dutch friends are holding an international exhibition at Heemstede, a suburb of Haarlem. The outdoor display arranged in a charmingly-wooded, undulating, and well-watered park, was opened on March 13 and will continue until May 21. To this general display we shall refer later.

To increase the general interest, a series of special shows was arranged; the dates fixed for these were March 13 to 21, March 21 to April 5, (see Fig. 128) April 11 to 19, April 27 to May 3, May 6 to 10, and May 15 to 21. It is greatly to be regretted that it was not possible to arrange for a special show for British exhibits or one at which there might be a special British section, as at Ghent in 1923. A plan of the show ground appeared in our issue of March 14, Fig. 70.

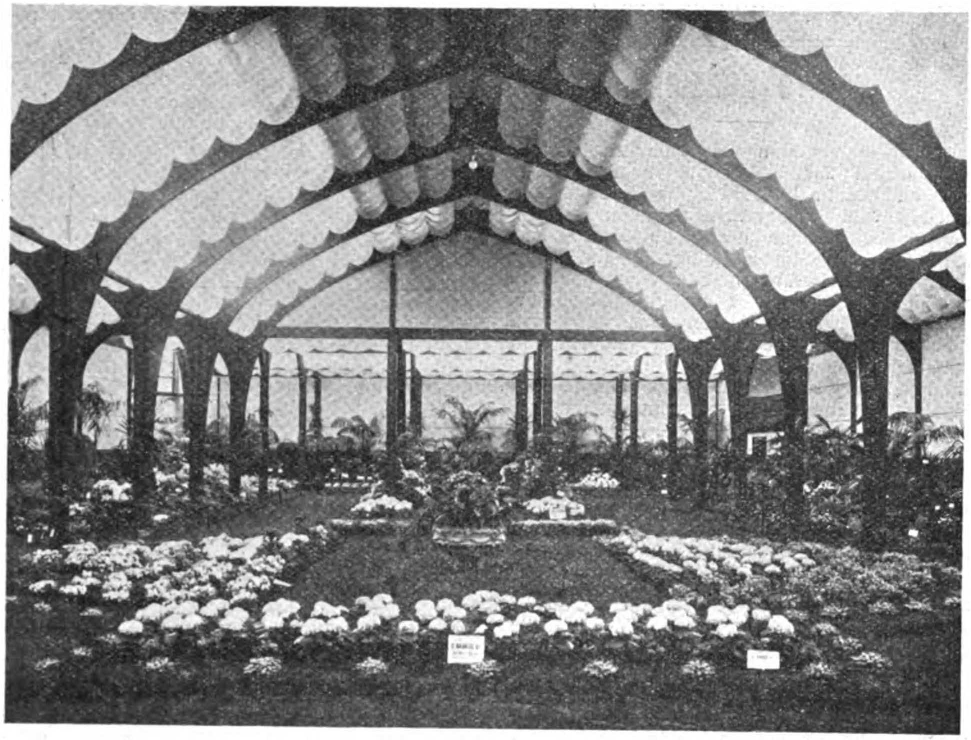


FIG. 128.—VIEW OF THE SECOND SPECIAL SHOW OF THE HAARLEM INTERNATIONAL EXHIBITION, SHOWING DUTCH EXHIBITS.

The special exhibition arranged in conjunction with the meeting of the Fédération Horticole Professionnelle Internationale, was opened officially on April 24, but judging was carried out by an international jury during the morning of April 23. and the public was admitted during the afternoon of that day.

The Britishers present were Mr. George Monro, Mr. Oldham, Mr. G. W. Leak, Mr. Alfred W. White, Mr. C. Engelmann, Mr. W. Cutbush, Mr. Murrell, Mr. H. T. Mason, Mr. Waugh, Mr. Charles H. Curtis, Mr. J. S. Brunton, Mr. G. T. Dickson. Mr. W. E. Wallace, Mr. Alex. Galt, Mr. Gullick, Mr. S Hale, Mr. C. Du Cann, and Mr. T. Windle. Those chosen to act as presidents of sections of the jury were Mr. George Monro, Mr. C. H. Curtis. Mr. C. Engelmann, and Mr. J. S. Brunton; Messrs. C. H. Curtis, C. Pynaert, and Peeters judged the important Orchid section.

Mr. Ernst Krelage, the President of the International Exhibition, welcomed the members of the jury, and referred to the great value of international exhibitions in stimulating horticultural trade and creating and cementing friendships among internationals. Comte André de Kerchove de Denterghem was appointed hon. president of the jury on this occasion, and was heartily congratulated upon the honour paid him; he accepted the honour in a charming little speech.

We may add that America was well represented at this show and the conference by Mr. R. Vincent, Maryland (in his eighty-third year); Mr. and Mrs. Bodger, California; Mr. A. de la Mere, *Florists' Exchange*, New York; and Mrs. F. King, of the "Garden Club" of America, Alma, Michigan.

Many of our Belgian and French friends were present, and it was pleasant to renew old friendships and make some new ones.

The proverbial continental hospitality was extended to the members of the jury and conference, commencing with lunch on judging day, given by the Society of Bulb Growers organising the exhibition; a reception of the delegates by the Dutch Government at the Salle des Chevaliérs, Binnenhof, The Hague, during the evening of April 23; lunch offered by the Municipality of Heemstede on April 24; a banquet in the evening at the Grand Badhuis Hotel, Zandvoort, given by the Dutch Society of Bulb Growers; an excursion to Boskoop, arranged on April 25 by the Dutch Plant Exporters' Association; a gala performance at Haarlem theatre offered by the Touring Society of Haarlem and the Theatrical Amateurs' Club on the same evening; and an excursion to Aalsmeer on Monday, April 27, given by the Dutch Royal Horticultural and Botanical Society.

Most of the delegates stayed at the Grand Badhuis Hotel. at Zandvoort, a seaside resort a few miles out of Haarlem—a delightful place, but a trifle inconvenient for the inevitable coming and going between it and the show at Heemstede and the Conference at Groenendaal Park.

The Show Hall.

The large hall was well filled, the centre being devoted to flowering plants, chiefly Azaleas, while Palms and other elegant foliage plants arranged in bold groups around the sides, formed a capital setting.

In the matter of extent this special show occupied an area about three times the size of the hall at Vincent Square. It provided a gay picture, but unfortunately rain fell on judging day and so the brilliance which bright light gives was lost on this occasion.

The general arrangement was excellent, and at one end of the hall a very pleasing scenic effect was produced by combined efforts.

Orchids.

Three very fine exhibits of Orchids almost filled the long annexe to the main building, and two of these were exceptionally fine.

The Priz d'Honneur—an Objet d'Art—with felicitations was awarded to M. F. **Lambeau**, of Brussels, for a delightful exhibit in which the background was formed by arching spikes of hybrid Cymbidiums and the golden Oncidium varicosum Rogersii. Limits of space will not allow a detailed account of the many fine varieties in this display, but a few of the outstanding subjects were Odontioda Memoria Jimmy, deep rose-red: O. Lizzie, almost scarlet; Brasso-Cattleya mirabilis, mauve and lilac; Cattleya Mont Kemel, a huge mauve flower with a yellow throat to the lip; Miltonia Bleuana var. candida, with five fine spikes; M. Reine Elizabeth, very handsome; the lovely white Cattleya Suzanne Hye: the pure white C. Lambosa; C. Empress Frederick; Laelio-Cattleya Dominiana; and the dark hued Odontioda Brackenhurst, intense red-brown. Bifrenaria Dallemagnae, with eight flowers, was a delightful plant. All the plants were beautifully grown and set up in such a manner that every one could be seen distinctly.

A Priz d'Honneur, with medal, was awarded to M. T. **Pauwels**, Meirlebeek, Ghent, for a grand exhibit, in which, of course, Cymbidiums figured finely, and they were large specimens of M. Pauwels specialities. These, with golden Oncidiums, formed a most elegant background for a fine selection of other choice things. Leading specimens in the body of the group were Brasso-Cattleya mirabilis, of fine form and colour, and represented by many plants; Cattleya Mossiae, C. Tambora var. Snow White, a wholly white form; Dendrobium atro-violaceum, numerous Odontiodas and Odontoglossums, and Miltonias in very fine condition, one of M. Bleuana carrying seven beautiful spikes. The arrangement was good and great attention had been paid to the ground work of Ferns and Moss. M. Pauwels is to be congratulated upon the condition of his plants and his new seedlings, as he had to begin all over again after the war.

M. **Emile Praet** was awarded a Gold Medal for his very pretty, if somewhat small, exhibit; he had Cymbidiums, Odontiodas, Odontoglossums, Cattleyas, Cypripediums, including the old C. villosum, and two fine specimens of Oncidium Cavendishiana, each with a big spike of golden flowers.

Azaleas.

A good idea of the structure of the exhibition hall may be obtained by a reference to Fig. 128. This illustration shows part of the scene created on the occasion of the second special show, when the Dutch growers made a great display of forced Rhododendrons and Hydrangeas.

The third show, to which we now refer, was a miniature Belgian Floralies, and the greater part of the brilliant display was provided by Belgian growers, and principally by the growers from the Ghent district. Azaleas and Palms were the leading subjects, and the whole of the central area was devoted to Azaleas. Needless to state there was a great mass of varied colours, and although some of the colours were not associated in the kindliest fashion the effect as a whole was brilliant and effective. How many Azaleas there were we should not like to state, but as there must have been several thousands the Ghent growers are to be congratulated upon their enterprise. It required no small amount of pluck, not to say time and money, to convey so many plants for so long a distance. We congratulate them upon their successful efforts, and a special word of thanks is due to Mr. F. Spae, who was by far the principal exhibitor. Without his heroic effort the Belgian special show would have been shorn of much of its glory.

One of the most attractive of the many varieties of Azalea on view was Apollo, represented by fifty handsome specimens sent by M. T. Piens, Melle, Ghent. This exhibit deservedly obtained a Gold Medal. The colour is flaming orange-salmon. MM. de Coster and de Vos, from the same suburb of Ghent, had one of the finest exhibits of the popular and useful Azalea Hexe; this collection formed the end of the great central display, and included plants of various sizes and trained in various shapes.

The semi-double, white, carmine-edged Azalea Albert-Elizabeth, which was the best new plant at the great International show at Ghent in 1923, was shown in fine condition by MM. Haerens and Wille, Somerghem, Ghent. Some of the plants were small ones in 60's and others were in 48's, while in the background of the group there were specimens a yard in diameter. All were finely flowered and had travelled well. Our readers will remember our illustration of this variety in connection with the Ghent Show, and also the more recent figure of a specimen (Fig. 61, March 7, 1925) of this distinct variety.

A very pretty, semi-double Azalea named Roem van Somerghem was very pleasing; it has soft blush-pink flowers of good size and form. Another variety which attracted special attention was the rich but soft salmon coloured Paul Schäme; this is considered to be a very early flowering sort. It was shown by MM. Adriaenssens Frères, Loochristy, and is very pleasing.

The deep magenta-purple Azalea violacea multiflora, shown by M. L. de Smet-Duvivier, Mont St. Amand, has a colouring which did not appeal to us, but the plants were very finely grown. Other outstanding varieties included the old favourite Vervaeneana, in bush and standard form; Suzanne Haerens, white; Elfrida, white, and Eclaireur, deep red.

One very large and especially attractive group of Azaleas consisted entirely of the popular variety Mme. Petrick, every specimen a mass of rich rose-pink flowers. This won a high award for M. A. de Coster, Ghent, and was a fine example of high cultivation. The lovely Azalea Hexe, represented by small plants, was used as an edging.

Our readers must understand that although we have singled out a few exhibits and varieties for special notice, the displays referred to were not distinct and separate items such as are seen at British shows, but were parts of the whole display, for in these matters our continental friends believe in co-operative exhibiting for the purpose of creating a great and striking and pleasing effect which is representative of a special branch of their horticultural industry.

The Antwerp Exhibit.

The Antwerp Growers combined to create a very pleasing picture at the end of the hall. A background of fine Kentias served to show up the colours of the flowering plants arranged in banks, in dells, and along the lower foreground. Cut Carnations, in baskets, were placed in suitable positions and were sometimes grouped in pleasing fashion. Hydrangeas were very charmingly used towards the base of the Palms. In the centre was a long bank of Primulas representing good strains of P. obconica with a few plants of the golden P. kewensis. Smaller groups in the foreground, at the bases of pillars, consisted of Dracaenas, Genistas, Anthuriums, small Hydrangeas, and Cinerarias. A ground work of deep-green Moss made a pleasing finish to this artistic and greatly admired display.

Foliage Plants and Hydrangeas.

A fine display was made across one end of the hall by the Flandria Company, Bruges. This consisted of a background of large, well-ground Kentias with standards of Eurya latifolia immediately in front. Then came a large collection of standard Azaleas representing many varieties, and then as an edging, a long line of Phoenix Roebelinii.

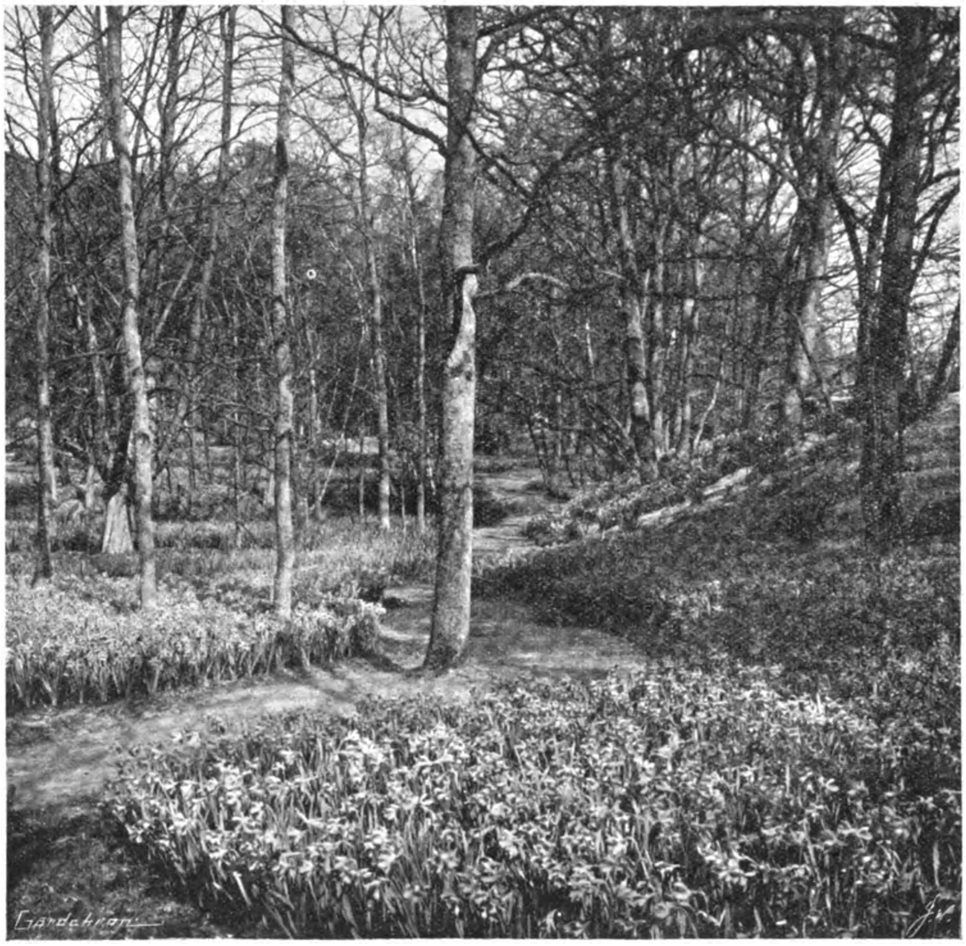


FIG. 129.—ONE OF THE DAFFODIL GLADES AT THE INTERNATIONAL EXHIBITION, HEEMSTEDE, HAARLEM.

A flanking group of Clivias from M. L. de Caluwe, Meirelbeke, gave a touch of rich colour and found an elegant and pleasing background in a fine batch of Cocos Weddelliana, with one of M. F. Spae's giant Kentias behind all.

M. F. Spae showed a collection of Bromeliads including Nidularium Meyendorfii, N. Mooreana, and the showy Vriesça viminalis erecta. Behind these were goodly specimens of Maranta Oppenheimii, Phyllotaenium Lindenii, a big Philodendron, Curculigo recurvata, Angiopteris fraxinifolia, Rhapis flabelliformis, and other interesting and beautiful foliage plants rarely seen nowadays. M. F. Spae also had several big groups of commercial Palms in various sizes, and in one of his numerous exhibits we noticed a giant specimen of the wide-spreading Latania borbonica.

Several other Ghent nurserymen contributed Palms, and these were grouped all around the hall, thus forming a fine setting of elegant green foliage for the massed colours of the Azaleas, Araucarias, Dracaenas, Aspidistras and Ferns; other useful foliage plants were also represented and shown in the usual splendid condition common to the Ghent growers.

M. J. Lossy, Destelbergen, was a large exhibitor of coloured Hydrangeas and he showed Etincilant, the rich red-pink Helge, and the paler Lorely in good style. M. L. J. Draps-Dom, Laeken, Brussels, contributed a beautiful lot of Hydrangeas in a great variety of colours, but unfortunately the varieties were not labelled. The very deep red-pink variety named Helge was particularly effective and we understand this is now considered to be the finest of all the richly coloured sorts. It is certainly very handsome and deserves to be widely grown for home and conservatory decoration.

Outdoor Display.

The beautiful park and woodlands in which the permanent exhibition is arranged provide an unique setting for a display of flowers of bulbous plants. There is ample water scenery and the undulating character of the extensive grounds has lent itself to the planting of superb drifts of Daffodils and Tulips. The Hyacinths are in beds, formally planted, but Daffodils (Fig. 129) and Tulips are massed in wonderful fashion under trees and by the sides of lakes and streams, creating a rich garden effect altogether different to the huge and solid blocks of floral colour seen in the bulb fields of Hillegom, Sassenheim, Leiden, Nordwyk, and other places around Haarlem. Mr. E. Krelage and his Committee are to be congratulated upon the splendid success achieved.

SOCIETIES.

NATIONAL ROSE.

April 24.—What has now become the Annual Spring Show of the National Rose Society was almost embarrassingly successful. Quite early in the afternoon the R.H.S. Hall was filled with crowds of eager enthusiasts, and this condition continued until the approach of closing time. That the hall was uncomfortably crowded was no fault of the management, but was one of the penalties of too great a success. As usual, the arrangements of Mr. Courtney Page were ably carried out by his assistants, and worked so smoothly that he was able to open the doors to admit a long queue of members considerably before the appointed time.

The general quality of the large number of blooms reached a high standard of excellence, and this was especially noticeable in the magnificent group of Mr. Elisha Hicks, for which a special Silver-gilt Medal was awarded in addition to the first prize, and, we are also most pleased to record, the amateurs' classes.

The Silver-gilt Medals, offered for the best blooms in the Show, were won by Mr. A. T. Goodwin with a glorious bloom of Maréchal Niel in the nurserymen's section, and by Mr. Sidney F. Jackson, with a magnificent bloom of Mrs. C. Lamplough, in the amateurs' classes.

Of a large number of very good new Roses one was awarded a Gold Medal and five Certificates of Merit.

Awards.

Gold Medal.

Templar.—This is a very lovely H.T. Rose of delicious fragrance. It is recommended for "garden and bedding," and the accompanying plant was of dwarf and floriferous habit. The medium-sized blooms are borne on good stems which are almost if not quite spineless. The colour is rich crimson with a darker, velvety sheen in the centre of the bloom. Shown by Messrs. G. Beckwith and Son.

Certificates of Merit.

Angele Pernet. — Obviously a Pernetiana hybrid, with large, shining leaves. The medium-sized blooms are good in all stages of development and are borne on stout, erect stems. The most uncommon and fascinating colouring may best be described as being old gold lightly suffused with Peach-pink. The flowers are very sweetly scented. Shown by Messrs G. Beckwith and Son.

Lady Margaret Stewart.—This is an enormous H.T. bloom of perfect exhibition shape. The plants are very vigorous, and bear good, dark foliage. The colour is indefinite. The blooms are mostly whitish with traces of yellow and buff; they are slightly scented. Shown by Messrs. Alex. Dickson and Sons.

Roselandia.—(See Fig. 121, p. 299). Shown by Mr. Walter Stevens.

Saltaire.—A small, fully-double H.T. Rose, which seemed overburdened with foliage. The colour is a deep velvety crimson. Shown by Messrs. Alex. Dickson and Sons.

White Ensign.—A delightful H.T. variety of medium size and perfect in all stages of development. From a little distance the purity of the blooms suggests unusually perfect and more rounded Niphetos, but a closer inspection reveals a fascinating creamy centre. The sweetly scented blooms are borne on long, graceful stems with good foliage. This valuable variety is recommended for "garden, bedding, and forcing." Shown by Messrs. S. McGredy and Son.

Other Novelties.

Besides those which were selected by the council for awards there were several new Roses of much more than average merit. Sensation, shown by Messrs. G. Beckwith and Son, is a goblet-shaped bloom, exceedingly beautiful in the bud, of rich, velvety maroon colour, lightened by dark crimson at the margins of the petals, which are of deep cardinal colour on the outsides. The blooms are deliciously fragrant and the variety is said to force well. Dame Edith Helen, shown by Messrs. Alex. Dickson and Sons, is a good, rich pink H.T. Rose of beautiful shape and borne on long stems. Red Explorer, a climbing Polyantha, shown by Messrs. Wm. Cutbush and Son, attracted a deal of attention. It is said to be a sport from Edith Cavell. A plant some seven feet high was shown and this was well furnished with erect trusses of semi-double bright crimson flowers. Maud E. Gladstone, a Polyantha Rose, shown by Messrs. Bees, Ltd., grows about two feet high, and bears double flowers nearly two inches across, of pretty pink colour and the old-fashioned Rose shape. It is very free-flowering and the buds are coloured deep coral pink. Gwynne Carr, shown by Messrs. Alex. Dickson and Sons, and Joan Howarth, shown by Messrs. Bees, Ltd., which have previously received certificates were especially well shown but did not receive the higher award.

Competitive Classes.

There was only one circular group of Roses; it was shown by Messrs. Chaplin Bros., and was awarded the first prize. A raised centre was well filled with plants of Lady Gay, Lady Godiva, American Pillar and similar cluster-flowered varieties. Over a groundwork of particularly good dwarf plants of such H.T. varieties as Golden Emblem, Maud, Madame Edouard Herriot, Ophelia, Mrs. Herbert Nash and Mrs. Henry Bowles, there were standards of Padre, American Pillar, Souvenir de C. Pernet and Golden Emblem.

Entries were more numerous in the class for a group arranged on the staging, and here Mr. Elisha J. Hicks won the first prize easily with a collection of such magnificence that the judges were impelled to recommend the special award of a Silver-Gilt Medal in addition to the first prize. Against the walls there were tall stands generously filled with Orleans, Coral Cluster, Ellen Poulsen and Excelsa, while on a lower level Mr. Hicks tastefully disposed gorgeous masses of Maréchal Niel, Los Angeles, Chas. E. Shea, Richmond, Ophelia, America and many other valuable Roses. The second prize was awarded to Mr. George Prince, who had fewer blooms, but the quality of Souvenir de Claudius Pernet, Chas. E. Shea, Pax, Augustus Hartmann, Lady Hillingdon and Victoria was very commendable. The principal varieties shown by Messrs. B. R. Cant and Sons were their lovely novelties Mrs. Beatty and Lady Wakefield, with Phoebe, Cupid and Esme. A relatively small collection and apparently not for competition was arranged by Mr. Walter Easlea, and this included good examples of Hoosier Beauty, Mrs. G. Beckwith, Souvenir de Claudius Pernet, Madame Butterfly and particularly fine blooms of America.

The only exhibit of six Pillar Roses in pots was from Messrs. Chaplin Bros. There were two pretty little groups of Polyantha Roses in a floor space. The first prize was won by the Rev. J. H. Pemberton, with floriferous examples of Juliana, Suzanne Turbat, Edith Cavell, Jessie and similar varieties. The second prize collection of Messrs. W. H. Cutbush and Son was not quite so freely flowered. They showed Salmon Queen, Rudolph Kluis, Ellen Poulsen and Chatillon Rose.

The two exhibits of exhibition Roses were of very good quality and the first prize collection set up by Messrs. B. R. Cant and Sons was especially well balanced both in colours and general high quality. The very best blooms were Glory of Steinforth, Rev. F. Page Roberts, Phoebe, John Dickson, Padre and Margaret M. Wylie. Mr. Elisha J. Hicks, who was second, did not have so many brightly coloured varieties, but his examples of Frau Karl Druschki, Rev. F. Page Roberts, Candeur Lyonnaise, Mrs. Foley Hobbs and America were admirable.

One almost expects Mr. A. T. Goodwin to win the first prize in the class for twelve blooms of any one variety with his magnificent Maréchal Niel, and it was so on the present occasion, with a dozen fragrant blooms of the highest merit. Mr. Hicks was second with admirable blooms of the pink Clovelly, and Messrs. B. R. Cant and Sons were third with really good examples of Constance Casson.

Mr. Elisha J. Hicks, who was the only exhibitor, was awarded the first prize for six blooms of varieties put into commerce since the beginning of 1921. There was no really outstanding variety in the collection. The best three were Mrs. T. Williamson, a blush-pink H.T., Wilhelm Kordes, pale yellow tipped with blush purple, and Sensation.

The best two baskets of Roses were of Lady Hillingdon and Mrs H. Stevens, shown by Mr. E. J. Hicks, while Maréchal Niel and Frau Karl Druschki, shown by Mr. A. R. Goodwin, were second. In the class for one basket of Roses the competition was very strong. Mr. A. T. Goodwin was first with Maréchal Niel of magnificent quality, Messrs. Alex. Dickson and Sons were second with a basket of Fred J. Harrison and a crimson seedling, both of beautiful, rich colour; and Mr. Hicks was third with mixed varieties.

Amateurs' Classes.

Although there were only two groups of cut Roses on the staging in a space not exceeding five-feet by three-feet, they were particularly effective. Mr. G. A. Hammond, Burgess Hill, won the first prize with a basket of Ophelia and most excellent vases of Rev. F. Page Roberts, Mrs. Edward Mawley, of lovely pink colour, and Wm Shean. Mr. H. R. Darlington, Potters Bar, was second.

Although Mr. Hammond was alone in the class for twelve blooms of exhibition Roses he would have been difficult to beat, so meritorious were his blooms of Mrs. Foley Hobbs, Augustus Hartmann, Mrs. Campbell Hall, Frau Karl Druschki, and Mrs. Henry Morse.

The class for six blooms resulted in a good competition, and here the first prize was won by Mr. H. Oppenheimer, Caterham Valley, with beautifully-coloured blooms of W. E. Wallace, Mrs. R. D. McClure, and Mrs. Charles Russell. Mr. S. F. Jackson, the second prize-winner, had, in a wonderful example of Mrs. C. Lamplough, the premier bloom in the amateurs' classes.

The best six blooms of any one variety were splendid specimens of Mrs. Foley Hobbs, staged by Mr. G. A. Hammond, while Mr. S. F. Jackson was second with but slightly inferior blooms of the same variety. Mr. C. Chambers, Harrow, was first in the class for six blooms in not fewer than three varieties, and Mrs. Courtney Page was second.

The best basket of one variety was a lovely arrangement of Mrs. Amy Hammond, shown by Mr. G. A. Hammond. In the class for mixed varieties Mr. J. W. Hart, Potters Bar, was first.

The artistic classes retain all their popularity, and the long array of dinner table decorations was a great feature of the show. In the open class, Mrs. May, Waltham Cross, was first, and she used Madame Butterfly to good effect. Mrs. Tisdale, Woodford Green, was second with a gorgeous table of Richmond.

In the amateurs' class, Mrs. Courtney Page added to her many successes with a very artistic table of Madame Butterfly, associated with purple-tinted Acer foliage and Maidenhair Fern. Mrs. A. D. RUFF, Sharnbrook, who had a charming table of Melody, was second. Mrs. OAKLEY-FISHER, Sudbury, was third, and Mrs. A. ROBINSON, Maidenhead, was fourth.

The best bowl of Roses in the open class was a lovely arrangement of Mrs. J. Beckwith by Mrs. A. R. BIDE. Of the many exhibits in the amateurs' class, the best was a delightful bowl of Ophelia and Madame Butterfly arranged by Mrs. COURTNEY PAGE. Mrs. OAKLEY FISHER was second with Golden Ophelia.

DEESIDE (ABERDEENSHIRE) FIELD CLUB.

THE annual meeting of this very flourishing club was held in the Town Hall, Banchory, in April. The Marquis of Aberdeen and Temair, the President, occupied the Chair. In his presidential address Lord Aberdeen warmly congratulated the club on the fine progress it was making, and mentioned that there was a proposition that would be brought forward at the first opportunity by the Marchioness of Aberdeen to have the club enlarged to take in the district of Donside. His lordship read a letter from Lady Aberdeen which was in the form of a notice of motion, and in which she suggested that the name of the club be known henceforth as the Deeside and Donside Field Club. The two districts, contended her ladyship, were distinctive in a way, but she thought it would add to the general interest, utility, and enjoyment of their proceedings if the neighbouring district were included within the scope of their operations.

Dr. George Smith, Bieldside, near Aberdeen, submitted a motion to give power to the executive council to make a grant to Dr. W. Douglas Simpson, one of the greatest authorities on the history and architecture of old castles in Scotland, for the services he had so ungrudgingly given to the club. He suggested a sum commensurate with the funds of the club, and not to exceed £75.

On the suggestion of Mr. J. B. Philip, joint secretary, and Sir Francis Outram, it was agreed to indicate to the members that donations towards this grant would be gratefully received. It was also intimated that Colonel Farquharson, of Invercauld, had granted permission to Dr. Simpson to undertake excavation work at Kindrochit Castle this summer.

Mr. J. S. Davidson, joint secretary, submitted a recommendation from the executive council that the membership be restricted to 450 ordinary members. That number would not include, he pointed out, honorary members, associate members, and life members. Last year they had registered the best part of 100 members, and in limiting the membership to 450 they felt they would have as many as they could cater for. Sir Francis Outram seconded, contending if they were to cater properly for the members they could not go beyond the number suggested.

Mr. J. B. Philip, joint secretary, moved an amendment that to keep down the membership they should impose an entrance fee. Mr. E. N. Watt seconded, as he felt Mr. Philip's suggestion would be better than fixing a particular figure. After discussion, however, the motion was carried by a substantial majority.

Warm thanks were expressed to those proprietors who had allowed the members to spend enjoyable and instructive excursions to their gardens, woods, etc., during last year. The treasurer, Mr. W. Robertson, stated that there was a balance of £87 on the year's working. The officials were cordially thanked and their reports unanimously adopted.

Office-bearers were elected, and the summer and winter committees merged in one. Twenty-seven new members were elected.

ROYAL HORTICULTURAL OF IRELAND.

THE Spring Show of the Royal Horticultural Society of Ireland was held, by permission of the Earl of Iveagh, K.P., in the Covered Court, Earlsfort Terrace, Dublin, on the 7th and 8th ult. The exhibition was generally considered to be the best of recent years. Daffodils and alpines were outstanding features, and a collection of the former, staged by Mr. J. Lionel Richardson, Prospect Gardens, Waterford, included new seedlings, three of which—Golden Prospect, White Nile, and Brightling—received First-Class Certificates, and two others—Nevis and Orange Glow—Awards of Merit; Narcissus Silver Salver and N. Mytilene, shown by Mr. C. W PARR, Glencarrig, Delgany, Co. Wicklow, were also awarded First-Class Certificates. A Gold Medal was unanimously voted to Mr. RICHARDSON for his imposing collection.

In the amateur classes Mrs. ALFRED WEST, Kilcroney, Bray (gr. Mr. C. Coster), won the Lord Ardilaun Perpetual Challenge Cup for thirty varieties of Daffodils, distinct, in threes. The Richardson Challenge Cup, offered for twelve varieties, including unnamed seedlings, was won by Mr. C. W. PARR. Other winners in the Daffodil classes were Mrs. BUTLER, Major SEGRAVE, Miss WYNNE, Miss HELY-HUTCHINSON, and the Rt. Hon. ANDREW JAMESON, with Mrs. WEST ultra-prominent.

Alpines were numerous and attractive. Mrs. BUTLER, Priestown, Co. Meath, won the Greer Challenge Cup outright with twelve pans of Alpines distinct, also the Nutting Cup for twelve pots or pans, not exceeding five inches diameter. Evidence of the untoward season was more apparent among hardy flowers, including shrubs, than among Daffodils. For a collection set up in vases, Captain RIALL, D.L., Old Conna, Bray (gr. Mr. T. Wester), was awarded the Challenge Cup. Exhibits in the smaller classes were best shown by the Hon. ANDREW JAMESON, Sutton Ho, Co. Dublin (gr. Mr. Osman), Lt.-Col. TWIGG, Malahide, with Captain RIALL as the winner of Messrs. Watson's prize for hardy shrub flowers. Choice species of Rhododendrons were well shown by Mr. G. VAUGHAN HART, Waltersland, Stillorgan. Hardy Primulas and Polyanthuses, including a rare lot of the old doubles, were plentiful, Captain RIALL having the best of the latter.

Among plants Richardias (Arum Lilies) were an outstanding feature; huge specimens in twelve-inch pots shown by Madame FOTTRELL, Richlieu, Sydney Parade (gr. Mr. Taylor), were awarded the first prize, Mr. CLIVE BROOKS (gr. Mr. H. Cousins) being second, and Sir FREDERICK SHAW (gr. Mr. J. Thomson) third. The first-named exhibitor was placed first for Hyacinths in two classes, and first for Tulips in two classes.

Nine exhibitors staged three pots each of excellent Mignonette, the Hon. GORDON CAMPBELL, Clonard, Kimmage Road, Dublin (gr. Mr. Cook); Madame FOTTRELL, and Mr. CLIVE BROOKS, Ashfield, Rathfarnham, winning in this order; the last exhibitor won Messrs. Drummond's prize offered for a table of bulbous or tuberous-rooted flowers, Captain RIALL winning the Jones Challenge Cup for a similar collection. Other classes in the floral section were well filled.

Vegetables were good, the chief prize-winners being LORD CLONCURRY, Lyons, Co. Kildare (gr. Mr. W. Hall); LORD ARDEE, Kilruddery, Bray (gr. Mr. W. Barrett); Mr. GORDON JOYCE (gr. Mr. C. Dunne); Mr. CLIVE BROOKS, and Mrs. MCCABE, Trimmleston, (gr. Mr. T. McGauley). Non-competitive exhibits included a collection of bulbs in fibre shown by LADY ARDILAUN, St. Anne's, Clontarf (gr. Mr. O. P. Reid), which was awarded a Silver Medal. A Silver-gilt Medal was awarded the DUBLIN NURSERY CO., Blackrock, for a tastefully arranged group of foliage and flowering plants. The show was visited by the Governor-General of Southern Ireland, who was received by the Marquis of Headfort, President of the Society, Lady Moore, and members of the Council.

GLASGOW AND WEST OF SCOTLAND.

THE last of the present series of winter lectures organised by the Glasgow and West of Scotland Horticultural Society was held on the 15th ult., when the popular subject of "Bulb Cultivation" was discussed by Mr. J. Davidson, gardener to Sir John Reid, Ardencraig, Rothesay.

As a consequence of the large attendance of members and the extensive display of Daffodills and Narcissi, the meeting was held in a more commodious hall than formerly. Fifty distinct varieties, representing the large Trumpet, Incomparabilis, Leedsii, Poetaz, and other groups taken from bulbs naturalised in grass at Ardencraig, were staged on a central table that extended across the greater part of the hall, and testified to the successful cultures obtained in the moist, mild climate of Bute, while Messrs. AUSTIN AND MCASLAN exhibited an interesting collection that occupied two smaller side tables, and included several promising seedlings. It is perhaps worthy of note that all the bulbs were English grown.

Mr. Davidson described the Daffodil as the most useful and accommodating of spring bulbs. It was equally at home planted among shrubs in the herbaceous border, in the rockery, in grass or beds, or in any odd corner of the garden. For naturalising in grass or woodland, formality should be avoided, and the lecturer suggested that different varieties should be planted near each other, as there was always the possibility of getting a good cross-bred seedling. Not only is the mixing better from a seeding point of view, but what is more important, as one variety goes out of flower another takes its place, and there are no large, bare patches throughout the flowering period, especially if care is taken to plant early and late as well as mid-season varieties. On the subject of early forcing, the lecturer remarked that two of the chief details leading to success was to purchase early and box or pot early. This was necessary to assure a good supply of strong, healthy roots to enable the plant to bear the strain of forcing. The lecturer urged steady forcing, gradually increasing the heat from 45° to 55° and then to 60°. Excessive firing, he considered to be not only a waste of fuel but ruinous.

Tulips differed from Narcissus in two important particulars, viz., that they require a little more bottom heat and darkness to force them successfully. For forcing varieties of a very early type on a large scale, he advised the use of a frame inside a forcing house until the stems are long enough and the buds well formed, when less heat and more light should be given. As a medium for lengthening the stems he suggested a covering of pots or boxes with Cocoanut fibre to the depth of four to six inches. After getting a fair start Tulips will stand a bottom heat of 60° to 65°, which may be increased to 70° without doing any harm, provided the surroundings are damp.

Mr. Davidson discussed the culture of bulbs in fibre at some length, watering, diseases, soils, manures, etc., also the suitability of bulbs for window box cultivation in cities and large towns. In the discussion which followed, Mr. Joseph Dobson expressed the opinion that the beautifying of the streets by means of window boxes was work for the society to undertake, and Miss Lambie spoke of the humanising effect which flowers had on the slum child. Sir John Reid also supported the scheme, and commented on Kevingrove being transformed into a sports ground. He advocated the formation of little bankings of Narcissus as beauty spots in the park. A hearty vote of thanks was accorded to the lecturer, who, in response, extended an invitation to members to visit the gardens at Ardencraig.

PAISLEY FLORISTS'.

The annual spring show of the Paisley Florists' Society, which claims to be the oldest horticultural society in Scotland, having been instituted so far back as 1782, was held on the 4th ult. Compared with last year the entries increased by close on one hundred per cent. and the quality of the competitive and trade exhibits also showed a marked advance. An outstanding feature of the show was the Paisley Corporation's exhibit staged by Mr. I. M. Fleming, superintendent of the public parks. It extended across the hall and consisted of such plants as Cinerarias, Primulas, Daffodils, Tulips, Azaleas and Rhododendrons, in full bloom, interspersed with Junipers, Grevillea robusta, and Eucalyptus. The background was formed by stately Palms and the colour grouping was executed in good taste.

In the pot Hyacinth classes Mr. John Bowie was first with (a) two specimens (Jacques and Enchantress) and (b) six varieties, of which Correggio, King of the Blues, Moreno and Schotel, were the best. He also won the first prize for a pot of miniature blooms, but Mr. E. G. Ross excelled with three fine heads of Jacques. Mrs. Hector Fraser won the ladies' competition for a pot of miniature Hyacinths, her plant consisting of twelve good spikes of La Grandesse, and her husband emulated her example by securing the awards for (1) a Hyacinth in a glass, with Pink Perfection, (2) a vase of Narcissi and (3) three vases of Daffodils. The other prize winners in this section were Mr. R. Benson (Soleil d'Or and Lucifer); Mr. T. Harvie (Vanilla and Van Waveren's Giant and Sir Watkin).

Tulips were not a numerous class, and the honours in the five competitions were shared by Mr. R. Benson, Mr. A. McGregor, and Mr. John Bowie.

The principal prize winners in the miscellaneous section were as follow:—Three pots of spring bulbs, Mr. R. Benson (Chionodoxa and Muscari); three pots of alpines, Mr. D. W. Keir (Primulas); cut flowers, Mr. D. McArthur (Cineraria, double Wallflower, and Hydrangea); two pots of Primula obconica and P. malacoides, Mr. D. McArthur; one pot of Cineraria grandiflora, Mr. D. Graham; Cineraria stellata, Mr. D. McArthur, who also secured the first position for a greenhouse plant in bloom with a large and well-grown specimen of Imantophyllum. The best Azalea indica in bloom was shown by Mr. John Dick; the best Dielytra in bloom, by Mr. John Hamilton; the best Deutzia, by Mr. T. Harvie; the best Spiraea, by Mr. A. McGregor; the best Schizanthus, by Mr. D. Graham; the best pot of Jonquils, by Mr. John Bowie; the best Fritillaria, by Mr. A. McGregor; the best Cyclamen and Calceolaria, by Mr. D. McArthur, and the best three plants suitable for table decoration, by Mr. A. McGregor (Fern, Coleus, and Hydrangea).

The trade groups contributed to the success of the show. Mr. John McFee, Paisley, was represented by a pretty display of Hydrangeas, Azaleas, Lilac, Polyantha Roses, and Cinerarias. Messrs. Kerr and Co. staged an interesting collection of Daffodils, Tulips, Hyacinths, Jonquils, and Muscari, while Messrs. Austin and M'Aslan, Glasgow, built a miniature rock garden, which was furnished with choice specimens of alpines and rock plants from their Cathcart nursery. A group of plants which made an effective colour display was set up by Mr. James Laidler, Paisley. The subjects included meritorious examples of Primulas, Cytisus, Ericas, Spiraeas, Hyacinths, and Hydrangeas.

ROYAL CALEDONIAN HORTICULTURAL.

SPRING SHOW.

The Spring show of this Society, which was resuscitated last year after a lapse during the war of nine years, was held in the Waverley Market, Edinburgh, on April 24 and 25.

The number of entries was about double those of last year, but compared with pre-war times, the display was a meagre one. Plants, but more especially table plants and Ferns, were, on the whole, poor, and the contrast between these and the large, beautifully-grown specimens which formerly were seen at these shows was very marked. Some excellent non-competitive exhibits, however, by the trade helped to enliven matters, and, although one-half only of the spacious hall was appropriated to the exhibition, there was a fair show of colour. A fine table of seedling Narcissi from Mr. W. G. Pirie, Dalhousie, arrested attention, and there were some excellent exhibits of alpines and other rock plants by the trade. The miniature rock gardens, for which prizes were offered, were, however, rather disappointing. Generally, they were skilfully designed, but their diminutive size, especially in a large hall, made them appear very puny-looking productions.

It might be well for the Council of the Royal Caledonian Horticultural Society to consider whether more imposing exhibits of this sort might, with advantage, be introduced, especially as this phase of gardening now makes a much stronger appeal to all classes than it formerly did, and as plants grown under glass are very markedly on the decline in this country.

As was the case last year, the leading prizes were gained by Colonel Trotter, O.B.E., D.S.O., Mortonhall, Midlothian (gr. Mr. W. Crighton), and Mrs. Turner, Inveralmond, Cramond (gr. Mr. J. A. Sword).

There were three entrants for the miniature rock garden on a space of six feet by four feet, and the first prize was won by Miss Dickson, Corstorphine. Mr. P. Aitkin, Ballencrieff, Bathgate, was the only competitor in the nurserymen's class for the same arranged on a space twelve feet by eight feet, and was awarded the first prize.

The following awards were made to the trade exhibits:—

Gold Medals.—Messrs. Dobbie and Co., Ltd., Edinburgh, for Cinerarias, Primulas, etc.; Messrs. Cunningham, Fraser, and Co., Edinburgh, for alpines, etc.; Mr. C. Engelmann, Saffron Walden, for Carnations; Mr. W. G. Pirie, Dalhousie, Midlothian, for Narcissi.

Silver-gilt Medals.—Messrs. Austin and M'Aslan, Glasgow, for alpines, etc.; Messrs. Laird and Dickson, Ltd., Edinburgh, for alpines, etc.; Messrs. Bakers, Ltd., Wolverhampton, for alpines, etc.

Silver Medals.—Messrs. Thos. Methven and Sons, Edinburgh, for miniature Japanese gardens, etc.; Messrs. John Forbes (Hawick), Ltd., for alpines, etc.; Messrs. Ransomes, Sims and Jefferies, Ipswich, for lawn mowers; Messrs. Geo. Monro, Ltd., London, for garden sundries.

Awards.

The following awards were made to new plants:—

First-Class Certificate—

Haberlea virginalis, exhibited by Messrs. Cunningham, Fraser, and Co., Edinburgh.

Awards of Merit—

Haberlea rhodopensis, var. Austinii, Rhododendron decorum, and *R. Cunningham's Sulphur*, exhibited by Messrs. Cunningham, Fraser, and Co., Edinburgh. *Daffodil Mrs. Pirie*, exhibited by Mr. W. G. Pirie, Dalhousie.

Obituary.

David Bell.—The news of the death of Mr. David Bell, nurseryman, which took place with tragic suddenness on the 23rd ult. came as a great shock to his many friends and the people of Ardrossan, among whom he had resided for over forty years. Deceased had been at work in the garden, and during the afternoon he was found in a sitting position on a barrow, apparently dead. When medical aid was obtained, life was found to be extinct. Mr. Bell, who was in his seventy-eighth year, was a native of Canonby, Dumfriesshire; and in his earlier days had been employed in the gardens af Buchanan Castle, Loch Lomond, and Montgomerie Castle, Tarbolton. In 1885 he was appointed gardener to the late Mr. Galloway, Kilmeny, Ardrossan, and twenty-eight years ago he started a nursery, which he conducted successfully during that period. He was well-known in horticultural circles in the West of Scotland, and took an active part in public affairs, being a member of Ardrossan Parish Council for twenty-seven years. At the time of his death he was chairman of the council, and had presided at the monthly meeting two nights previously. He was also an elder of the parish church, having been ordained to that office in 1902. A man of genial nature, Mr. Bell had a wide circle of friends, and his passing is deeply regretted. He is survived by one son and five daughters.

TRADE NOTES.

Messrs. Kent Bros. Electric Wire Co. and E. H. Phillips, Ltd., have forwarded us a sample of a thin, black wire of about the ordinary gauge of black cotton made especially for use in protecting plants and seed-beds from birds. The makers inform us that it is weather resistant, of great durability, inexpensive, and practically invisible. They further state that it has been thoroughly tested and proved to be quite satisfactory for the purposes mentioned above. The wire is as pliable as ordinary cotton and supplied on reels. The sample sent us is of a gauge equal to 1,700 yards to the lb. The address of the makers is 15, Berners Street, Oxford Street, W. 1.

ANSWERS TO CORRESPONDENTS.

Names of Plants. *Ruts*: Ornithogalum nutans. *E. G.* 1, Pseudotsuga Douglasii; 2, 15, 18, 22, 23 and 24, all forms of Cupressus Lawsoniana, a very variable plant; 3, Abies lasiocarpa; 4, Cupressus Lawsoniana var. lutea; 5, C. macrocarpa; 6 Berberis Hookeri var. viridis; 7, B. vulgaris; 8, Abies Pinsapo; 9, Cupressus obtusa var. aurea; 10, Erica mediterranea var. hybrida; 11, Discaria Toumatou; 12, Euonymus japonicus var. albo-variegatus; 13, Arbutus hybrida; 14, Cupressus obtusa var. compacta; 16, C. pisifera var. aurea; 17, C. Lawsoniana var. ochroleuca; 19, Cedrus atlantica var. glauca; 20, Cupressus pisifera var. squarrosa; 21, Thuya dolabrata; 25, Cephalotaxus pedunculata; 26, Juniperus chinensis; 27, Veronica Traversii; 28, Cupressus Lawsoniana var. albo-variegata; 29, Ilex Aquifolium var. laurifolia longifolia; 30, Cotoneaster salicifolia var. floccosa; 31, Juniperus communis; 32, Thuya occidentalis var. ericoides; 33, Holboellia latifolia; 34, Ilex Aquifolium var. scotica. *A. W. G.* 1, Billbergia nutans; 2, Crassula impressa; 3, Fuchsia procumbens; 4, Sedum sarmentosa; 5, Leucophyta Brownii; 6, Pittosporum Tobira var. variegata.

Communications Received.—R. W. B., U.S.A.—J. E. A.—C. O. L. P., Madeira.—G. H. D.—E. S. S.—E. F.—C. H. G.

MARKETS.

COVENT GARDEN, Tuesday, April 28th, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldii...	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Azaleas, per doz.	15 0–36 0
Cacti, per tray,	
—12's, 15's ...	5 0– 7 0
Cinerarias, doz.	15 0–24 0
Crotons, per doz.	30 0–45 0
Cyrtomium ...	10 0–15 0
Erica melanthera, 48's per doz. ...	21 0–30 0
— —60's, per doz.	8 0–10 0
Marguerites, white, 48's per doz. ...	15 0–18 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia ...	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's ...	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun. ...	12 0–15 0
Asparagus, plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays ...	1 6– 2 6
short „ ...	0 9– 1 3
—Sprengeri, per bun.	
long sprays ...	1 6– 2 0
med. „ ...	1 0– 1 6
short „ ...	0 4– 1 0
Azalea, white, per doz. bun. ...	8 0– 9 0
Bouvardia, white, per doz. bun....	9 0–12 0
Camellias, White, per box ...	3 0– 3 6
Carnations, per doz. blooms ...	3 0– 4 6
Croton leaves, var., doz. leaves	0 9– 2 6
Daffodils—	
—Barrii, per doz.	2 6– 3 0
—Emperor, per doz. bun. ...	4 0– 5 0
—King Alfred, per doz. bun....	6 0– 8 0
—Sir Watkin, per doz. bun. ...	3 6– 4 6
Fern, French, per doz. bun. ...	0 9– 1 3
Galax, American, green and bronze, per doz. bun. ...	— 3 0
Gladiolus, Blushing Bride, per doz. bun. ...	18 0–24 0
—Peach Blossom, per doz. bun. ...	24 0–30 0
Gypsophila, white, doz. bun. ...	5 0– 6 0
Ixia, red, doz. bun.	3 0– 5 0
—Mixed, doz. bun.	3 0– 4 0
Lilac, Dutch, per spikes	4 0– 8 0
Lilium speciosum rubrum, long, per doz. blooms	4 0– 5 0
—short „ „	3 0– 4 0
Lilium longiflorum long, per doz. ...	4 0– 5 0
Lily-of-the-Valley, perdoz. bun. ...	24 0–36 0
Narcissus—	
—ornatus, per doz. bun. ...	2 0– 2 6
Orchids, per doz.	
—Cattleyas ...	24 0–30 0
—Cypripediums...	5 0– 7 0
Prunus triloba (Dutch), per bun.	1 0– 1 6
Richardias (Arums) per doz. ...	3 0– 4 0
Roses, per doz. blooms, Richmond	3 0– 5 0
—Liberty	3 0– 5 0
—Madame Butterfly	3 0– 5 0
—Mme. Abel Chatenay ...	3 0– 4 0
—Melody ...	3 0– 4 0
—Molly Sharman Crawford, per doz.	3 6– 4 6
—Niphetos ...	2 6– 3 6
—Ophelia	4 0– 5 0
—Sunburst ...	4 0– 5 0
Ruscus, French, per bun. ...	1 0– 2 0
Smilax, per doz. trails	3 0– 3 6
Spanish Iris, per doz. bun.—	
—Blue	18 0–24 0
—Mauve	18 0–24 0
—White	18 0–24 0
—Yellow	24 0–30 0
Statice, mauve ...	5 0– 6 0
Stock, English white	9 0–18 0
Sweet Peas, per doz. bun. ...	6 0–10 0
Tulips, per bunch—	
—Bartagon ...	1 6– 3 0
—Clara Butt ...	2 0– 3 0
—Wm. Copland ...	1 6– 3 0
—Farncombe Sanders	2 0– 3 0
—White Swan ...	1 0– 2 0
Violets, per doz. bun.	2 0– 4 0
French Flowers—	
Anemone, St. Brigid	2 6– 5 0
Marguerite, yellow, per pad	6 0– 7 0
Marigolds, per pad	5 0– 6 0
Ranunculus, dble. scarlet, doz. bun.	4 0– 6 0
Star (Allium), per pad, 48's ...	5 0– 6 0
Stock, double white, per pad 24 bunches ...	8 0–10 0
—double coloured	8 0–10 0
Violets, Parma, per bun. ...	3 0– 3 6

REMARKS:—Business has shown a slight improvement on the previous week, but prices generally have been on the down grade. Daffodils from home growers begin to show signs of finishing, Barrii Emperor and Empress being the most reliable kinds on sale. The first consignments of these blooms have already reached the market from Scotland, but supplies from this quarter are somewhat limited, and arrivals very erratic, and there is a possibility of these blooms advancing in price shortly. Good Darwin Tulips are one of the shortest subjects in this department, and insufficient for present requirements. Fairly good supplies of these blooms are being received from Guernsey, but they are very medium in quality compared with those from home growers. Spanish Irises are arriving in larger quantities, and their quality generally is finer; a better selection of sorts is available. Carnations are good and more plentiful. The best sorts at present on sale are Aviator and Beacon, scarlet; Carola and Enid, crimson; Delight, silvery-pink, very limited. Other pink varieties are Enchantress, Laddie, Cupid, Lady Northcliffe, Mayday, Daydream, Mrs. Hemus, Mrs. Ward, bright pink, and Peerless. White varieties consist of White Perfection and White Enchantress. Roses retain their excellent quality and have been easier in price since St. George's Day. Sweet Peas are gradually improving in quality and becoming more plentiful. The newest subject is Gladiolus Blushing Bride. Ixias are arriving in good condition from the Channel Islands in addition to Anemones, White Stocks, Tulips, Irises, and white and coloured Ranunculuses, which are very popular at the present time. Gypsophila and mauve Statice are the latest arrivals amongst the French flowers.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Albermarle ...	45 0–50 0
—Oregon Newtown	14 0–18 0
—Bramley's Seedling	6 0–17 0
—Newton Wonder ...	10 0–14 0
Australasian Apples—	
—Cox's Orange Pippin	20 0–28 0
—Worcester Pearmain	16 0–17 0
—Ribston Pippin	16 0–17 0
—Dunn's Seedling	16 0–18 0
—Alfriston ...	16 0–17 0
—Others	12 0–15 0
Bananas	17 0–27 6
Grapes—	
—Belgian	4 0– 4 6
—English—	
—Hambro, per lb.	4 6– 6 0
—South African—	
—White Hanepoot	6 0–10 0
—Red Hanepoot	8 0–12 0
—Colmar	12 0–14 0
Grape Fruit, Cuban	20 0–25 0
—Jamaica ...	20 0–25 0
—Florida, finest	25 0–35 0
Lemons, Messina, per box... ...	8 0–12 0
—Murcia	12 0–15 0
—Naples	16 0–20 0
Oranges, Jaffa ...	14 0–16 0
—Spanish—	
—300's	18 0–32 6
—360's	15 0–22 6
—504's	14 0–22 6
Pears, South African—	
—Beurré Diel ...	4 0– 4 6
—Beurré Bosc ...	4 6– 6 0
—Doyenné du Comice	6 0– 8 0
—Australian—	
—Beurré Bosc ...	8 0–10 0
—Beurré Clairgeau	— 6 0
—Others	5 0– 6 0
Pines	3 6– 5 0
Strawberries, per lb.	4 6–12 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Artichokes, per doz.	2 0– 3 0
Beans, Guernsey, per lb.	1 3– 2 0
—Worthing ...	1 3– 1 9
—Madeira, per box	4 0– 6 0
Beets, per cwt....	5 0– 8 0
Cabbage, per tally	10 0–12 6
Canary Island Tomatos ...	25 0–27 6
Cauliflowers, per doz.	2 0– 3 0
Chicory, per lb. ...	0 6– 0 8
Carrots, per doz. bun.	— —
—New	6 0– 8 0
Cucumbers, per doz.	4 0– 6 0
—Flats, 36's, 42's	14 0–16 0
Dutch Onions ...	11 6 12 6
Endive, per doz.	1 6– 3 0
—Batavian, per doz.	3 0– 3 6
French Asparagus—	
—Cavaillon ...	1 6– 2 0
—Lauris	2 0– 3 6
Greens, best, per bag	4 0– 5 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundles... ...	2 6– 3 6
Lettuce, per doz.	— —
—Cos	3 0– 6 0
—Cabbage ...	1 6– 3 0
Mushrooms, cups	2 6– 3 0
—broilers	2 0– 2 6
Marrows, doz. ...	6 0–15 0
Mint, Forced, per doz.	4 0–12 0
Onions, Valencia, per case ...	15 6–17 0
—Egyptian, per bag	11 0–12 0
—English, per cwt.	12 6–14 0
—Spring	— 4 0
Parsnips, per cwt.	3 0– 4 0
Peas, French, per cane	6 0– 8 0
—Guernsey forced per lb.	1 6– 2 6
Potatos, Canary Island	14 0–16 0
Potatos, per ton—	
—Dunbar ...	240 0–260 0
—King Edward	200 0–220 0
—Others ...	90 0–160 0
—New Guernsey lb.	0 6–0 9
—Jersey	0 7–0 8
—Scilly	0 7–0 9
—Algerian ...	0 2–0 2¼
Radishes—	
—Round	1 6– 2 6
—Long	1 3– 1 6
Rhubarb, Forced, per doz. ...	1 3– 1 6
—"Natural" per doz.	4 0– 5 0
Savoys, per tally	12 6–15 0
Seakale, Natural, ¼-sieve	8 0–10 0
Spinach, per bushel	3 0– 4 0
Tomatos, English, per lb.	1 9– 2 0
—Guernsey ...	1 9– 2 0
Turnips, new, per doz. bun. ...	6 0– 8 0

REMARKS.—A moderately-brisk demand has ruled during the week. Pears and Grapes from South Africa have sold well, but some parcels have been out of condition, for which low prices have been taken. Fairly large quantities of Apples are coming from Australia and New Zealand for which a good demand rules. Australia is also sending Pears, consignments of which are not expected to be so large as usual owing to a reduced crop. Oranges are a good trade. Top-grade brands of Grape Fruit are also quoted firmer. English Tomatos increase in supply almost daily. Cucumbers are in heavy supply, considering which, prices are fairly good. Forced Beans are a slightly better trade. Forced Peas are not plentiful, and selling at a satisfactory return to the growers. Guernsey and Scilly New Potatos are in fair demand. New Potatos from the Canary Islands are cheaper, stocks on hand being heavy. Hothouse Grapes are slightly cheaper, the large supplies from Australia and the Cape affecting values. Natural-grown Rhubarb is plentiful and cheap, but forced Rhubarb is a poor trade. Mushrooms are a steady trade at a good price level. Green vegetables are a slightly better trade. The demand for salads is good. Trade in old Potatos is steady.

GLASGOW.

There was a glut of Daffodils in the cut flower market throughout the whole week, and prices made new low records for the present season. Emperor, Golden Spur, ornatus, Sir Watkin, and Pheasant Eye could be bought almost any day at 9d. per dozen bunches, while the top prices for specials did not exceed 3/-. Tulips moved irregularly, some varieties being cheaper and others dearer. First arrivals of Afterglow realised 1/6 for 6's. William Copland and Farncombe Sanders ranged from 1/1 to 1/6; Bartagon and Clara Butt, 1/- to 1/4; Prince of Austria, 8d. to 10d.; Couronne d'Or, 10d.; Hyde, 1/- to 1/1; Antony Roozen, 1/2; Mme. Krelage, 1/- to 1/2, and Murillo, 8d. to 10d. for best and 4d. to 6d. for ordinary. With the exception of Madame Butterfly, which averaged from 4/- to 6/- per dozen, prices for Roses were inclined to fall, especially for Lady Hillingdon, which only made from 2/- to 2/6. Richmond brought from 1/3 to 3/-, and Mrs. Henry Stevens 2/6 to 4/-. Dutton's Carnations were firmer at 3/- to 5/- per dozen, but the average prices obtained by other growers are as follow:—Enchantress and Peerless, 2/6 to 3/6; May Day, 3/-; Mrs. Hemus and Lady Northcliffe, 3/- to 3/6, and Aviator, 3/6 to 4/6. White Lilac fluctuated between 6/- and 7/-. Richardias realised 4/- to 6/-, Lilium longiflorum (Harrissii) 3/- to 4/- per dozen cut, and 5/- to 6/- in bunches. Wallflowers were worth 2/- to 3/-; Maiden Hair Fern, 9d.; French Anemones, 4/- to 6/- per cane, and Scottish-grown Anemones, 9/- per dozen. Plants of large Daisies were plentiful and sold at 1/- to 1/3 per box. First consignments of French Gypsophila made 6d. to 8d.

Dealing in the fruit market was void of any special feature, and where changes in prices were recorded the movements either way were small. Cape fruits were rather slower to move but prices kept steady, especially for Pears, which were quoted as follows:—Winter Nelis, 6/- to 7/-; Beurré Bosc, 5/- to 7/6; Glou Morceau, 6/- to 6/6; Josephine de Malines, 5/6 to 6/6; Louise Bonne of Jersey, 5/6, and Beurré Clairgeau, 5/- to 5/6. Gros Colmar Grapes advanced to 16/- and 18/- per case, while other varieties were steady. Waltham Cross from 12/- to 14/-; Hanepoot, white, 10/- to 12/6, and red, 12/- to 14/-. Grape fruit was scarcer, and buyers had to concede from 28/- to 30/- per case. Oranges were mostly lower, 360's being 14/- to 17/-; 300, 15/- to 17/-; 460's, 30/-, and Jaffas, 10/- to 14/-. Prices for Apples were firm, United States Albemarle making from 44/- to 52/- per barrel; Baldwin, 28/- to 35/-; Ganos, 28/- to 32/-; Winesap, 15/- to 18/- per case; Newtown, "Blue Diamond," 19/-; "Red Diamond," 18/-; other brands, 18/- to 21/-. Palermo Lemons ranged from 8/6 to 12/-; Mercia Lemons, 14/6 to 16/-, and Naples Lemons, 12/- to 15/- for 300's.

In the vegetable section French supplies were more plentiful. Asparagus made 2/- per crate; Lettuces, 1/3 dozen; Cucumbers, 7/- to 8/-, and White Turnips, 4/-. Cauliflowers were cheaper at 4/- to 6/-; Leeks, 2/- to 2/6; Evesham Leeks, 6/- to 7/-; Seakale and Radish, 2/6 to 3/6; Guernsey Tomatos were down to 2/- and 2/6, and Teneriffe Potatos were lower at 14/- per No. 2, and 12/6 for No. 3. Rhubarb continues to be a remunerative crop for raisers; Polmont special made 52/- per cwt., and ordinary, 46/- to 48/-.

SCHEDULES RECEIVED.

LEEDS PAXTON SOCIETY.—The thirty-first annual show will be held in the Town Hall, Leeds, on Friday and Saturday, November 6 and 7. Secretary, Mr. F. STABLER, The Gardens, Cookridge Hall, Horsforth, Leeds.

WHITLEY, MONKSEATON AND CULLERCOATS FLORAL AND HORTICULTURAL SOCIETY.—Exhibition to be held in the Marquee, The Links, Whitley Bay, on Monday, August 3. Secretary, Mr. J. Haley, 22, Countess Avenue, Whitley Bay.

GARDENING APPOINTMENTS.

Mr. A. Hawkins for the past twelve years general foreman at Acryse Place, near Folkestone, as gardener to CAPT. FAIRBRACE, Elmstone Court, Preston, near Canterbury. (Thanks for 2s. 6d. for R.G.O.F. Box.—EDS.)

Mr. C. Mears, previously gardener to the late PAUL WATERHOUSE, Esq., Yattendon Court, Newbury, Berkshire, as gardener to the REV. WENTWORTH WATSON, Rockingham Castle, near Market Harborough, Northants. (Thanks for 2s. 6d. for R.G.O.F. Box.—EDS.).

Mr. William Frewin, for the past five years gardener to J. DEANE WILLIS, Esq., Bapton Manor, Codford, as gardener to the same gentleman at Stratton Park, Swindon, Wiltshire.

Mr. H. Wright, for the past six years gardener to LORD WYFOLD, Wyford Court, Reading, as gardener to F. E. LOYD, Esq., J.P., Shaw Hill, Melksham, Wiltshire. (Thanks for 2s. for R.G.O.F. Box.—EDS.).

Mr. J. Bundy, for the past twenty-one years gardener to COL. HOLT, The Grange, Farnborough, Hampshire, as gardener to JAS. MOON, Esq., Mymwood, near Hatfield, Hertfordshire. (Thanks for 2s. for R.G.O.F. Box.—EDS.).

CATALOGUES RECEIVED.

DANIEL BROS., LTD., Norwich.—Summer bedding plants.

W. CUTBUSH AND SON, LTD., Barnet Nurseries, Barnet.—Herbaceous, alpine, and bulbous plants.

H. J. JONES, Hither Green, Lewisham.—Dahlias, Hydrangeas, Chrysanthemums, etc.

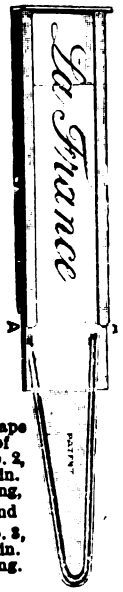
GAVIN JONES AND INGWERSEN, Baldock Road, Letchworth Garden City.—Alpines and hardy plants.

J. CARTER AND CO., Raynes Parks.—"Lawns and Sports grounds."

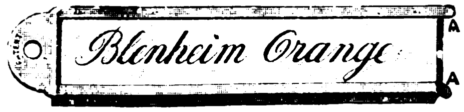
W. TRESEDER, LTD., 30, Cowbridge Road, Cardiff.—Dahlias, Chrysanthemums, etc.

DUTSON'S PATENT "ALLPROOF" LABEL

This shows glass partly fixed in frame.



Shape of No. 2, 6 in. long, and No. 3, 8 in. long.



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No. 1. TO HANG. 3½ in. long.

Strong Sheet Zinc. No Rust.

Glass slides into frame, and is secured by turning down EAR. (See letter A).

Writing space has dead white surface. Old writing can be obliterated with indiarubber or soap and water. Use any soft pencil. NOT INK.

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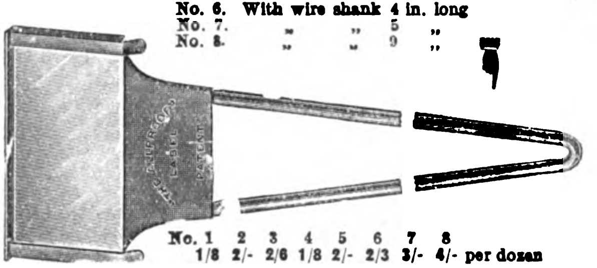

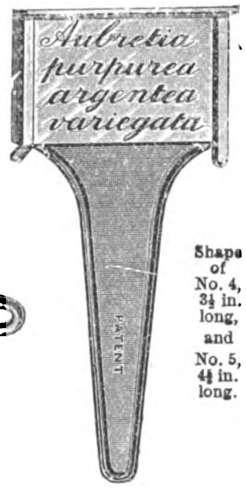

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No. 1	2	3	4	5	6	7	8	
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30 by 6 **15**s. Carriage Paid.

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THE

Gardeners' Chronicle

No. 2002.—*SATURDAY, MAY* 9, 1925.

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Average Mean Temperature for the ensuing week deducted from observations during the last fifty years at Greenwich, 52·5°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, May 6, 10 a.m. Bar. 29·7, temp. 50°. Weather, Cloudy.

Mycorrhiza and Leguminous Plants.

It is, of course, a well-ascertained fact that the roots of many different kinds of plants—Coniferous and flowering plants—as well as Ferns are habitually infected with a fungus. The fungus, which takes up its abode on or in the root, gains access to the latter from the soil. Once it has established itself therein the fungus behaves like a shadow, dogging the root as it grows and extending throughout the tissues as the root extends. The mycorrhizal fungus is generally restricted to certain tracts of root-tissue. In many of our forest trees the fungus forms a mantle over the young parts of the root, except the extreme tip. The hyphae of the fungus cover the surface and dip in between the superficial cells of the root, but do not appear to enter the cells. When they are present the root fails to produce root-hairs, and hence it would appear that the absorption of water and mineral salts normally carried on by these organs is undertaken by the mycorrhizal fungus. This fact has contributed to the generally-accepted idea that the relation between root and fungus is mutually beneficial; in other words, that it is a symbiotic relation. This conception has in turn led to an extension of the idea of parasitism to include not only cases in which the host suffers from the attack of a parasite but also those in which no manifest harm, and possible good, accrues to the partners of the association. As "a certain number of fleas are good for a dog," so the superficial fungus mantle constituting the mycorrhiza of our forest trees appears to be good for them. In numerous other cases the hold which the fungus gets on the root is more profound. The fungus enters into the cortex of the root and sends suckers or haustoria into the cells. The nice state of balance between host and fungus-parasite is often illustrated by the fate of the haustoria. Instead of sucking the verdure out of the cell which it enters, the haustorium after a period of growth within the cell may be ultimately destroyed. The most recent observations* on the subject of mycorrhiza add many Leguminous plants to the already long list of those which are habitually infected with mycorrhizal fungi. Among the Leguminoseae in which this state of affairs exist are the common Pea (Pisum sativum), the Sweet Pea; the Clovers: Trifolium pratense, T. repens and T. hybridum; Medicago sativa, Melilotus officinalis, and M. alba, and not a few other species. Wherever the garden Pea is grown, at all events in America, the mycorrhizal fungus is found in attendance upon it. The effect of the fungus would appear to be mildly harmful. In its presence the young roots show a yellowish colour, and at times when root growth is inactive—as, for example, late in the season—the fungus appears to flourish better, extending throughout the whole of the young roots right up to the tip. At other times when the roots are growing well the growth of the fungus is less vigorous. With the view of ascertaining whether the presence of the fungus is on the whole harmful to the plant, Mr. F. R. Jones carried out some cultures of Sweet Peas in sterilised and in unsterilised soil. Having sterilised the soil by means of formaldehyde he grew sundry Leguminous plants—Sweet Peas, Alfalfa, and red, white and Alsike Clovers in the sterilised and also in the unsterilised plots. The roots of the plants in the sterilised plots showed no signs of yellowing until late summer nor did they become infected till then. The effect of soil sterilisation was to produce more vigorous growth. In the case of the Sweet Pea, the plants in the treated plots grew twice the height of those in ordinary soil and had twice the number of blossoms. The Clovers and Alfalfa also profited by growth in sterilised soil. Whether, however, the more vigorous growth was due to the elimination of the mycorrhizal fungus or to the direct physical and chemical effects of soil sterilisation, was not determined. Nevertheless, here is a hint by which amateurs of Sweet Peas might like to profit. Mr. Jones has explored the occurrence of the mycorrhizal fungus among other cultivated and wild plants. He has found it in the Onion, Asparagus, Asters, Strawberries, Dandelion, Violas, Maize, and certain other plants. It looks as though practically all plants will be found to live habitually in association with fungi, and if so, the poet's asservation that "nothing in the world is single" will apply with unexpected cogency to our flowering plants.

North of England Pansy and Viola Society.—This special floral Society is to be congratulated on the excellent *Journal* it has published for 1925. It contains a great deal of interesting matter concerning Pansies and Violas, although the majority of the pages are devoted to lists of subscribers, the rules of the Society and schedules of the various exhibitions which will be held in 1925. The several shows held under the auspices of the Society are an amateur's show to be held in the Royal Horticultural Society's Hall, Westminster, on June 30 and July 1; the tenth annual show to be held in conjunction with the Saltaire Rose Society's show on July 14 and 15; the Nelson Section show to be held in connection with the Nelson Small Holders' Society's show, at Nelson, on August 22; the show to be held in connection with the Southport Flower Show on August 26, 27, and 28; the competition to be held in connection with the Walsden Horticultural Society's show at Todmorden, on Saturday, August 29; and the exhibition of Violas and Pansies in connection with the great International show to be held in the Industrial Hall, Annandale Street, Edinburgh, on September 9, 10 and 11. Amongst the short articles is one entitled "The behaviour of the 1924 New Violas," by Mr. John Smith of Galemire, in which he gives place of honour to Mary Douglas, which he considers the best wire-edged white variety up-to-date. He considers that the yellow variety John Adamson will hold its own against any other yellow sort, although it is rather slow in blooming in the early months. Peace Fold, creamy-white; Moseley Sunrise, Kathleen Condry, and Mrs. R. Beveridge, are all well spoken of by Mr. Smith.

Violet awarded a Gold Medal.—Violet Mrs. David Lloyd George was awarded a Gold Medal at the New York show. This beautiful Violet, which was illustrated in *Gard. Chron.*, November 16, 1918, p. 199, was raised by Mr. J. J. Kettle, and received the R.H.S. Award of Merit on November 8, 1918. The petals are deep, violet-purple, with a few darker markings at their base. In the centre are four white petaloid segments, forming a white eye, and a few violet lines appear on each of them. The flowers are deliciously fragrant.

An Orchid Exhibition in a London Stores.—During the past week a display of choice Orchid plants in bloom, arranged in the best exhibition style, by Messrs. Sanders, St. Albans, has been on view at Messrs. Harrods, one of the largest stores in the West-end of London. The multitudinous departments of this vast emporium include a large floral hall and Palm court in which plants and flowers are displayed for sale, and it was in the floral hall that the Orchids were arranged. The group comprised choice varieties of Miltonias, Cymbidiums, Cypripediums, Cattleyas, Odontoglossums, Odontiodas, Dendrobiums, Masdevallias, and Coelogynes. In the centre of the exhibit was a plant of the fine Cymbidium Ceres with two big spikes carrying large, delicately rose-tinted blossoms, and at the back of this was a splendid specimen of Cattleya Empress Frederick alba with two fine spikes, whilst in front was a specimen of Brasso-Cattleya Apollo (B.-C. Digbyano-Mossiae × C. Mendelii), the segments looking like pale pink satin and with a speckled front to the beautifully fimbriated lip that has a tinge of gold in the throat. On either side of the Cymbidium was a plant of Odontioda keighleyensis that hung its rich red flowers on a long spike. Many of the visitors were especially interested in Coelogyne pandurata because of its beautiful green segments and lip of most remarkable formation, the latter being spotted and reticulated with black in a manner a painter might envy. There were fine examples of the dull-coloured Cymbidium Devonianum with its hanging racemes of flowers, and also of Cymbidium Merlin, a beautiful soft pink flower with a richer coloured lip showing traces of red, and with golden ridges in the interior. Both Odontioda Charlesworthii and O. Magali Sander were finely in bloom. Several Miltonias added to the attractiveness of the display, M. Bleuana delicata being notable for its delicate

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* A Mycorrhizal Fungus in the Roots of Legumes and some other Plants. By Fred. R. Jones, Pathologist to the Bureau of Plant Industry, U.S. Department of Agriculture. *Journal of Agricultural Research.* XXIX., No. 9, November 1, 1924.

flowers free from spotting, and M. St. Andre in which the blooms are blotched with claret-red, the colour passing faintly in the two upper side segments to appear as a rosy suffusion. These are only a few of the many flowers employed in this interesting exhibition, which, judging by the large number of tickets bearing the word "sold" on them, appears not only to have interested visitors but to have resulted in considerable business.

Mr. W. Morter.—The many friends of Mr. W. Morter, Superintendent of the Birmingham Public Parks, will regret to learn that he has undergone a very serious operation and is now in a nursing home at Edgbaston, where he will have to remain for at least a month. He is progressing favourably, but even under most successful conditions his recovery must necessarily be a slow one.

Opening of South Lodge Gardens to the Public.—By permission of Dame Alice Godman, D.B.E., the delightful gardens at South Lodge, Lower Beeding, Horsham, will be opened to the public on Thursday and Saturday, May 28 and 30, from 11 a.m. to 6.30 p.m. A charge of 1/- will be made for admission.

Romance of the Genus Browallia.—An interesting account, for which we cannot vouch the authenticity, is given in one of the American gardening papers concerning the names of the various species of Browallia. The story goes that Linnaeus, who had written an article on plant life advocating some new theory that was disputed by the naturalists of his day, was supported by John Browall, Bishop of Sweden, and this so pleased and elated Linnaeus that he named the genus Browallia after him, and the original species B. elata. Later, another species was discovered, but by this time the Bishop and Linnaeus were not so friendly, and Linnaeus named the second species demissa. Finally, when a third species was found, Linnaeus and the Bishop were not on speaking terms, and so the third was called B. eliminata.

The Blossoming of the Plums.—A correspondent residing in Suffolk, writes: "The cheerful spirit of optimism which pervades the leading article on page 293 is very delightful, and it may, let us hope that it will, cheer up those in this far eastern (for England) county of Suffolk, to whom the weather of April has given a bad attack of pessimistic dumps. In all the strong-land garden work is seriously in arrear, not solely as a consequence of the 2·88 inches of rain that has fallen on sixteen days of the poetical 'month of sunshine and tears,' but as its crown to the wetness of previous months. When the days were not wet the nights were frequently cold with heavy white frosts, while when both wet and frost were escaped, there came winds from the several quarters of the compass almost equally bitingly cold. Growers of Plums are not a little worried as to what the accumulated result of the evils will be. Trees of Victoria, Rivers' Early Prolific and Czar, easily the most popular varieties, with Monarch in much more restricted numbers, have been superbly beautiful from April 20 onwards, and between that date and the end of that month the rainfall was 1·21 inch in seven days, there were white, night frosts, no fewer than five thunderstorms, three of them with heavy hail, and four days (the last consecutively of the month) when the wind was either east or north, and no one will venture to say which direction gave us the colder. There have been gleams of sunshine bringing happiness in degree, and we will accept them as auguries of future plenty, but we will count no Plums for another four weeks at least. Professional gardeners and commercial fruit growers should adopt 'Hope on, hope ever,' as their motto, and the latter will find now and again that hope will be the only thing on which he can live for the greater moiety of a season."

Mr. Sidney W. Flory.—By inclination Mr S. W. Flory is an Orchid lover, and in business he is a capable raiser and grower of Orchids. On leaving school he became associated with his uncle, the late Mr. H. A. Tracy, who for many years carried on the business of Orchid importer and grower at Twickenham, where a very extensive collection was ably managed. Cymbidium Tracyanum is one Orchid which keeps green the memory of this fine grower. At Twickenham Mr. Flory had ample opportunity for a liberal education in Orchid species, as well as in hybrids, as the Amyand Park collection was always well up-to-date, and Mr. Tracy's wide acquaintance with travellers enabled him to acquire many rare and interesting species. Mr. Flory remained with his uncle until the death of the latter in 1910, and he carried on the business for about three years. Building operations at Amyand Park emphasised the urgent need for transferring the establishment to a more open district, and so when Messrs. James Veitch and Sons closed their business Mr. Flory entered into partnership with Mr. J. M. Black, then Orchid grower to Mr. Richard Thwaites, and purchased the Orchid branch of the Veitchian business at Slough. With the combination of the Amyand Park and the Slough collections, Messrs. Flory and Black had an unusually good start, and they have successfully endeavoured to maintain the Veitchian traditions in the raising of fine hybrids. A few genera in which Mr. Flory has produced excellent results are Disa, Miltonia, Odontoglossum, and Laelio-Cattleya, and hybrids from Sophronitis grandiflora. Mr. Flory has served on the Royal Horticultural Society's Orchid Committee since 1913.

MR. S. W. FLORY.

Presentation to Mr. J. S. Brunton.—On the occasion of the annual dinner of the British Carnation Society, held at Frascati's Restaurant, on Tuesday last, Mr. J. S. Brunton was presented with a handsome clock with Big Ben chimes, and Mrs. Brunton with a gold bracelet. The presentation was made by Mr. W. E. Wallace who made a suitable and pleasing reference to the excellent work done by Mr. Brunton on behalf of the Society as Chairman of Committee and in other respects. The presentation was subscribed to by many Carnation enthusiasts who desired to show their appreciation of Mr. Brunton's untiring efforts continued over many years.

Forsythias ovata.—According to the *Bulletin of Popular Information*, issued by the Arnold Arboretum, this species of Forsythia was in flower in the Arboretum nearly two weeks earlier than any of the other Forsythias. It was discovered by Mr. E. H. Wilson in 1918 on the Diamond Mountains in northern Korea, and forms a large shrub with light yellow branches, bearing coarsely-toothed leaves, and has clear, Primrose-coloured flowers, rather smaller than those of the other cultivated species. In parts of America, where the climate is too severe for Forsythia Fortunei or any of the forms of F. intermedia, F ovata will be especially valuable, for the plant is very hardy, and the flower buds not likely to be injured by frost.

Women's Farm and Garden Association.—The annual meeting of the Women's Farm and Garden Association will be held on the Association's Small Holdings Colony, at Wire Mill, Lingfield, Surrey, on Tuesday the 26th inst.

Cob Nuts, Filberts and Walnuts.—*Leaflet* No. 106 issued by the Ministry of Agriculture is devoted to the cultivation of Cob Nuts, Filberts and Walnuts. It is interesting to learn that the well-known Kentish Cob is really a Filbert and its synonym is Lambert's Filbert, it having been raised by Mr. Lambert of Goudhurst, Kent. The varieties recommended for cultivation are, besides Kentish Cob, Red Filbert, White Filbert, Cosford, Duke of Edinburgh, Pearson's Prolific, and Merveille de Bolwyller. Kentish Cob, Cosford and White Filbert are said to be the most suitable for growing in plantations and the others are recommended for gardens where they may be allowed to grow more naturally. Probably the most valued variety for private gardens is Duke of Edinburgh, for in addition to the flavour of the nuts being excellent the tree is a good bearer. If a pollinater is required Pearson's Prolific may be chosen because of its freedom in bearing catkins. With regard to Walnuts, the disadvantage of having to wait for very many years before the trees arrive at a bearing stage deters many from planting them, but the variety Dwarf Prolific has the reputation of coming into bearing at an early age, often when the tree is only three feet high. The practice of thrashing Walnut trees with sticks at harvest time has, states the *Bulletin*, nothing to recommend it and should be discouraged, for Walnut trees are susceptible to ill-usage.

Gray's "Lea."—In 1920 a monument to the poet Gray and about three acres of meadow adjacent to Stoke Poges Church were presented to the nation by two residents of Stoke Poges. On Thursday last Viscount Grey of Fallodon accepted the deeds of a further and adjoining ten acres of meadow land on behalf of the National Trust. This added area has been acquired by subscriptions sent from all parts of the world, and the cost of the land was £2,000. The land thus saved from the hand of the builder, together with the three acres previously secured, forms the "lea" referred to by Gray in his immortal "Elegy."

Royal Gardeners' Orphan Fund.—The Annual Festival dinner in aid of this excellent charity will take place on Wednesday, May 13, at the Hotel Victoria, Northumberland Avenue, W.C., at 7 p.m. The Right Hon. Sir Alfred Mond, Bart., M.P., will preside. Donations for the Chairman's list should be sent to the Secretary of the Fund, Mr. A. C. Bartlett, 19, Bedford Chambers, Covent Garden, W.C. 2.

International Horticultural Exhibition at Haarlem.—The series of special shows arranged in connection with the International Horticultural Exhibition at Groenendaal Park, Heemstede, Haarlem, will conclude with a general display from May 15 to May 21. The exhibition of floral art arranged by the Dutch florists opened on May 6 and will close on May 10.

Gardeners' Royal Benevolent Institution's Festival Dinner.—We are pleased to be able to announce that the Rt. Hon. Austen Chamberlain, M.P., has kindly consented to preside at the eightieth Anniversary Festival Dinner of the Gardeners' Royal Benevolent Institution, which will be held at the Grocers' Hall, City of London, on Thursday, July 2.

Appointments for the Ensuing Week.—Monday, May 11: United Horticultural Benefit and Provident Society's meeting. Tuesday, May 12: Southampton Royal Horticultural Society's show (2 days); Jersey Gardeners' Society's meeting. Wednesday, May 13: Sheffield Chrysanthemum Society's meeting; Bath Gardeners' Society's meeting; Royal Gardeners' Orphan Fund annual festival dinner at the Hotel Victoria. Friday, May 15: Manchester and North of England Orchid Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Horticultural Shows at Chiswick.* The following extract from the Report of the Council of the Horticultural Society to the Anniversary Meeting, May 1, will have some interest for those who think of visiting the ensuing exhibitions at Chiswick: "For many years the exhibitions at the Garden were accompanied by such constant fine weather that precautions against rain appeared needless. From 1833 to 1843, a period of eleven years, only two afternoons out of thirty-three were wet, and of these one was very slightly so. In 1845 and 1846 every day was fine; but since that time the weather in May, June and July has changed so much that out of nine meetings, in 1847, 1848, and 1849, five have been more or less stormy. In 1849, one day only proved wet, but so much inconvenience was then experienced that the Council have felt obliged, from a regard to the convenience of visitors to endeavour to devise such a remedy as is possible where very large numbers assemble in the open air. With this view the old entrances to the Garden have been paved and drained, and a new, double entrance has been opened into the Arboretum, from the Duke of Devonshire's road, whence a gravel walk, six-hundred-and-thirty-feet long and fifteen-feet wide, has been made as far as the large conservatory. On either side of this walk the tents will be pitched, and it is expected that a dry line of communication will be secured, in the event of rain, from one range of tents to the other. This alteration would not, however, have alone completed a convenient approach to the tents from the more distant entrances to the Garden, and, therefore, it has been found desirable to construct another gravel walk, fifteen-feet wide and six-hundred-and-sixty-seven-feet long, from the old gate in the Duke of Devonshire's road as far as the new approach to the Conservatory. In doing this the opportunity has been taken of reconstructing the Flower Garden, which had for many years been much in want of remodelling. The Garden Committee, under whose charge these works were placed, availed themselves of plans prepared by Mr. Glendenning, to whom the execution of the ground-work and planting was also entrusted. The Council trust that this operation will be found to have added greatly to the convenience of visitors to the Garden, as well as to have improved its appearance. In order to render these alterations useful to the exhibitors, a yard expressly for the purpose of receiving their waggons and carts has also been formed out of a portion of the orchard in the neighbourhood of the tents." *Gard. Chron., May* 11, 1850.

Publications Received.—*Gladioli.* By A. J. Macself. Thornton Butterworth, Ltd., 15, Bedford Street, Strand, W.C. 2. Price 6/- net. *Tropical Gardening and Planting.* By H. F. MacMillan. Third edition. Times of Ceylon Co., Ltd., Blackfriars House, New Bridge Street, London, E.C.4 Price £1 17s. 6d.

PLANTS NEW OR NOTEWORTHY.

The following two new plants were observed in flower recently at Headfort, Kells, Co. Meath:—

RHODODENDRON MEGERATUM, Forrest, No. 20332, S.E. Thibet.—This is apparently a very dwarf-growing species, showing the usual divergence in habit of these dwarf Rhododendrons when raised from seed, somebeing bushy, some fastigiate. The stems are brown, the leaves elliptical to ovate, with blunt ends, in colour a shining dark green above, glaucous beneath, with numerous golden scales sunk in pits. The margins of the leaves have long, slender hairs like eye-lashes, with lighter-coloured hairs on the mid-rib. These hairs are very marked on the leaf-stalk.

The flowers are borne in twos and threes, and they are terminal. The corolla is widely expanded, from one-and-a-half inch to two inches across.

When in the bud stage the calyx and flower-stalk are orange-red, the petals a clear canary yellow with deeper splashes, the two above the stamens being very much marked in the fully opened flower. The calyx is large, the segments about half-an-inch long by one-third inch broad. The pedicles are hairy, three-quarters-of-an-inch long; the anthers are dark reddish-brown, contrasting strikingly with the yellow corolla, which is very distinct from any other shade of yellow yet seen in the dwarf Rhododendrons.

This charming little plant is a valuable addition to our collections and should be a great acquisition for rock gardens.

EPIGAEA ASIATICA.—This is a dwarf-growing species, a native of Japan, very much like E. repens in habit, with green, creeping stems that turn brown when old. The ovate-lanceolate leaves are two-and-a-half inches long, one inch broad, more elongated than those of E. repens, deep green on both sides, bristly, and deeply veined; the flowers are borne in elongated racemes with many bracts. The corolla is urn-shaped, tapering slightly towards the mouth; white below, the five reflexed segments are of a rich carmine-pink and half-an-inch in length. The calyx of five lanceolate segments is deeply dissected, green at the base, shading to pink at the apex, and covered with numerous fine hairs; the pedicles are bright pink.

When the flower withers the calyx closes up, enveloping the fruit.

The plant forms a creeping tuft three inches to four inches high. The specimen at Headfort is a most compact, delightful, desirable little tuft—grown from seeds sent from Edinburgh. There is only one plant of this Epigaea at Headfort. *W. Phylis Moore, Rathfarnham, Co. Dublin.*

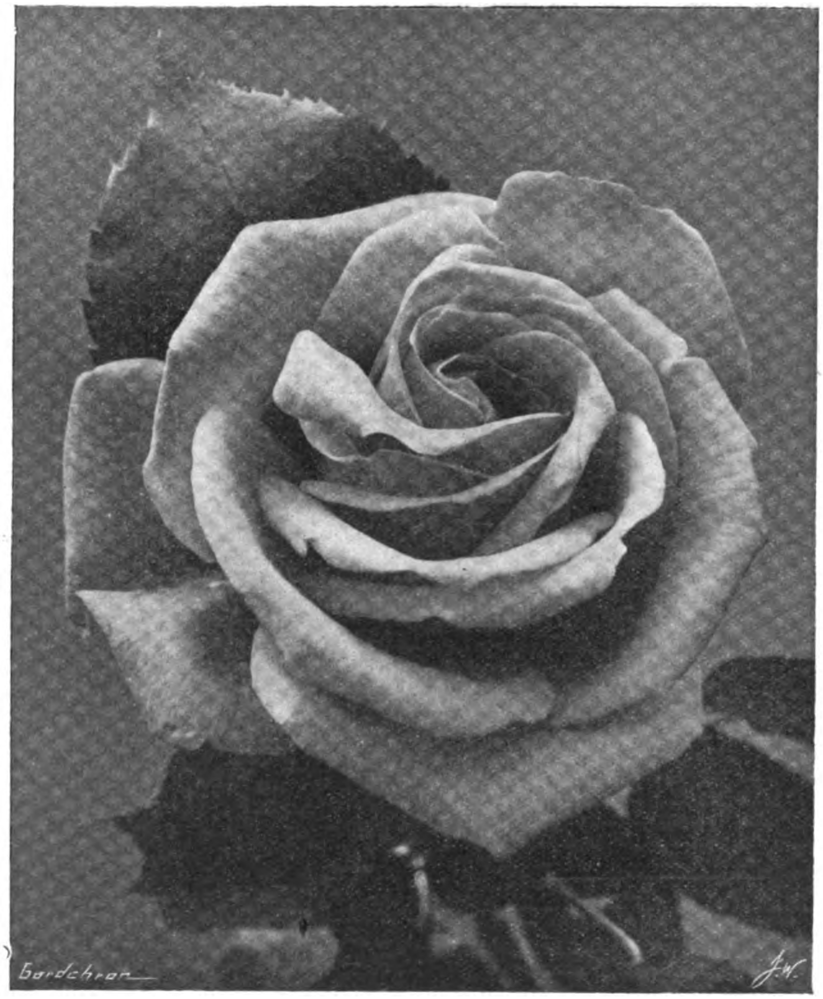

FIG. 130.—ROSE TEMPLAR.

Awarded a Gold Medal at the National Rose Society's Spring Show, April 24. A fragrant, crimson H.T. variety (see p. 306).

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Cymbidiums.—During recent years these handsome Orchids of the C. insigne and C. Lowianum type and their many hybrids have become extremely popular with most growers, not only with amateurs who specialise in Orchids, but also with people who do not make a pretence to a general Orchid collection. Probably no flowering plants have a greater claim for usefulness, beauty and easy culture, than the Cymbidiums, which will undoubtedly receive extended popularity. One great advantage from a grower's point of view is that they do not require a high temperature to be grown to perfection. A minimum of 50° or a usual cool, or greenhouse temperature, suits them admirably. No definite time can be set apart for the general re-potting of these plants, as their flowering season extends over a long period. There is no necessity for annual disturbance at the roots, but when such an operation is decided upon, experience teaches that the best time to re-pot is about six weeks after flowering. Cymbidiums when in good health are always in root action, and therefore give the best results when re-potting takes place as far removed as possible from the new flowering season. These plants yield the best results when given comparatively small shifts, this, of course, necessitating more frequent re-potting, which, as a rule, does not interfere so much with the flowering the same season as when larger pots are employed. Extreme caution is necessary in the application of water to the newly potted plants, until the roots have freely entered the fresh compost; an excess of moisture at this period in many cases not only results in the loss of leaves, but also decay of the pseudo-bulbs. At all seasons it is a good practice to allow the plants to become periodically dry, and then give them an adequate supply of water. Spraying the leaves, particularly the undersides, during the summer is beneficial, for it will greatly assist in the prevention of attacks by insects, such as red spider and thrips.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Herbaceous Borders.—The growth of herbaceous plants is now rapid, and the staking and tying of all kinds which need support calls for constant attention. This work should always be done before the plant becomes too heavy to support itself, and a timely beginning saves much labour later. For many of the lighter-foliaged plants a few twiggy Hazel branches inserted in the clumps will give sufficient support, but tall-growing subjects with heavy foliage will need strong stakes and ties. For large clumps several stakes will be necessary, supporting the growths by means of strings from stake to stake rather than bunching the growths to a single stake.

Border Chrysanthemums.—The planting out of these plants may now be carried out provided they have been well hardened. It is not wise to plant them in very rich soil. A site prepared for them in the autumn and left to consolidate during the winter is ideal—the plants may be fed after the flower-buds have formed.

Annuals.—Continue the pricking off of half-hardy annuals sown in frames, and harden such as are established, preparatory to planting them out in the open ground. If insufficient plants are available sowings may still be made thinly in a frame, transferring the seedlings direct to their flowering quarters when large enough to handle, or if no frame is available the seeds may be sown outside and kept well watered. Beds or groups of hardy annuals sown in the positions where they are to flower should be kept clean, and the plants thinned, if necessary, so soon as they can be handled; any weak places may be re-sown

Zinnias.—A bed of these beautiful plants is an object of outstanding brightness, and a little extra trouble taken with them is well repaid. The seedlings often do not transplant very well from boxes, and a good plan is to put them into small pots from boxes now in preparation for planting out at the end of the present month. Keep them growing steadily without much fire-heat so that they may continue to grow without a check when planted out.

Lawns and Walks.—Grass is now growing rapidly, and mowing should be done weekly at least. Even if the grass does not appear to be very long it is wise to do this as it not only ensures tidiness but makes the work and the strain on the mower much lighter. Where there are flower beds on the lawn the edges should be trimmed after each mowing. Roll gravel walks after every rain and keep them well swept and free from weeds. Where it is intended to use weed-killer applications should be made while the walks are moderately moist.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Gesneras.—For a winter display in the stove or warm greenhouse Gesneras are eminently useful, and few subjects can be relied upon to give more pleasing effect at that time of the year than these plants when well-grown, and they are by no means difficult subjects to cultivate. Well-ripened corms should now be started in a light compost consisting of peat, loam, leaf-mould, and sand. The pots should be well-drained. Five or six corms of the stronger growing varieties placed in a six-inch pot will be sufficient. The pots may be but three parts filled with soil, thus allowing for later top-dressings, or the corms may be started in smaller pots, from which, later, they may be transferred intact to larger ones. Very little water should be applied until the young growths are an inch or so high. Later, the plants will need plenty of moisture at their roots, and a moist atmosphere is essential at all stages of growth. They must also be shaded from bright sunshine.

Cineraria.—Seeds of Cineraria may now be sown to provide plants for flowering in the autumn and early winter. Use well-drained pans and a light mixture of loam and leaf-mould, with a free addition of sand. Sow the seeds thinly, and lightly cover them with a dusting of the finest soil. Place the pans in a cool, shaded frame for the seeds to germinate. To perpetuate the true stock of any particular variety, propagation by cuttings should be resorted to. The old plants should be cut down after flowering and be placed in a cold frame, fully exposing them to the open air on all favourable occasions (shading them only from strong sunshine) to ensure the production of sturdy cuttings. When the cuttings are ready, or when it is felt desirable to propagate, they should be inserted singly in thumb pots and afterwards placed in a propagating frame under a north wall, outside.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Caterpillars.—Caterpillars are more numerous in some localities than in others, and they put in their appearance very soon after the fruits have set. They are easily detected by the leaves being webbed together and the caterpillar enveloped between the leaf and fruit; in some cases they are rolled between the leaves at this stage. Spraying is useless; they should be destroyed by pressing with the thumb and finger. If the trees have been sprayed with nicotine soap or one of the proprietary insecticides sold for destroying caterpillars before the blooms open, most of the pests will have been destroyed.

Pear Midge.—Keep a sharp watch for this pest so soon as the Pears commence to swell. They are generally visible after the fruits have grown to the size of Hazel nuts, and may be detected by the large, rounded appearance of the infested fruit, which swells to double the size of others. To make sure of collecting the damaged fruits and not healthy ones, cut one or two open to see if the midge is present. All deformed fruits should be collected and burnt at once and never be allowed to drop from the trees. Spraying the trees as advised for the destruction of caterpillars will be helpful in exterminating this pest.

Apple-leaf Scab.—At the time of writing the weather has not been genial, and the ground is still cold, especially the heavy soils. The ground being cold is in favour of leaf scab, and where the soil is of a heavy texture it would be wise to make an extra spraying of Bordeaux mixture just as the petals begin to drop. The fruits being in a very small stage would not be so liable to retain any of the sulphate of copper. Insecticides that are of a poisonous nature, and are more or less sticky, would leave a deposit on the undersides of the fruits, and rains do not always wash off the poison.

The Fruit-Room.—In many places Apples in store are more or less finished, but the few late varieties remaining should be looked over occasionally and all decayed fruits removed. The following are a few good and reliable sorts of culinary Apples:—Edward VII., Crawley Beauty, Ontario, Newton Wonder, and Barnack Beauty.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Tomatos.—Keep the fruiting plants well supplied with water, and if they are carrying heavy crops water them on alternate occasions with weak, liquid manure. Use artificials according to the directions supplied by the makers, once a week. Keep all side shoots pinched off and the main stems well tied in. See that previous ties are not cutting the stem: this is most important. Make a sowing for the autumn crop. Admit plenty of air at all times, and should any difficulty be found in setting the fruits try the effect of a very slight syringing during mid-day. This is proving very efficient in experimental quarters. I strongly advise the growing of a few of the yellow and small-fruited varieties for salad purposes, these having a much milder flavour, beside adding colour to the salad bowl.

Early Peach House.—When the fruits have finished stoning it will be advisable to raise the night temperature to 65° and allow a rise of 10° during the day. Syringe the trees early in the morning and again at closing time; this operation should be done thoroughly at the present time to prevent attacks of red spider. If this pest spreads it will weaken the trees greatly, and the finishing of the crop will be impaired. See that the whole of the fruits are swelling quickly and evenly and remove any badly placed specimens. On no account overcrop the trees. Plenty of feeding is now necessary and a slight mulching of manure will prove beneficial to the trees and bring the roots to the surface. Keep the shoots well tied in position and expose the fruits to the full sun by placing small strips of wood under each one. Pinch out any leaves that may overhang the fruits. Ventilate the house freely on bright days and keep the paths well damped. Those who experience a difficulty in preventing Cardinal Nectarine from scorching are advised to shade the trees lightly from strong sun, and see that the foliage is dry before the sun reaches the tree.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Celery.—Continue to plant seedling Celery that has been hardened off, in trenches, either in single or double rows. If the ground is dry, water the plants thoroughly on all occasions when necessary as Celery will not thrive under dry conditions. The main batch of seedlings may now be pricked off into frames if the latter are available: if not, the seedlings should be pricked off into boxes and kept growing steadily until they are fit to plant out.

French Beans.—Sow further batches of French Beans for succession. This sowing should be considered safe anywhere in the open, as danger from frosts should have passed by the time that germination has taken place. Strong-growing varieties such as Canadian Wonder should be grown in rows made one-and-three-quarter-feet to two-feet apart, but for some of the dwarfer-growing sorts rows one-and-a-half-feet asunder will suffice.

Broad Beans.—If Broad Beans are required for late use a final sowing should be made forthwith.

Spinach Beet.—It is a wise plan to sow a few rows of Spinach Beet this month in addition to the sowing that is usually made in August. It is rather difficult in some dry summers to keep up an unbroken supply of summer Spinach owing to the tendency of the plants to run to seed quickly; it is then that the young leaves from this sowing will be found useful, and will form an excellent substitute for summer Spinach. Sow the seeds in drills fifteen inches apart, and thin the plants to nine inches asunder. Keep the hoe regularly in use.

Rhubarb.—Rhubarb crowns are now growing strongly and should be fed liberally. Flower stems will shortly begin to appear, and these should be cut out at once so as not to take the strength from the roots.

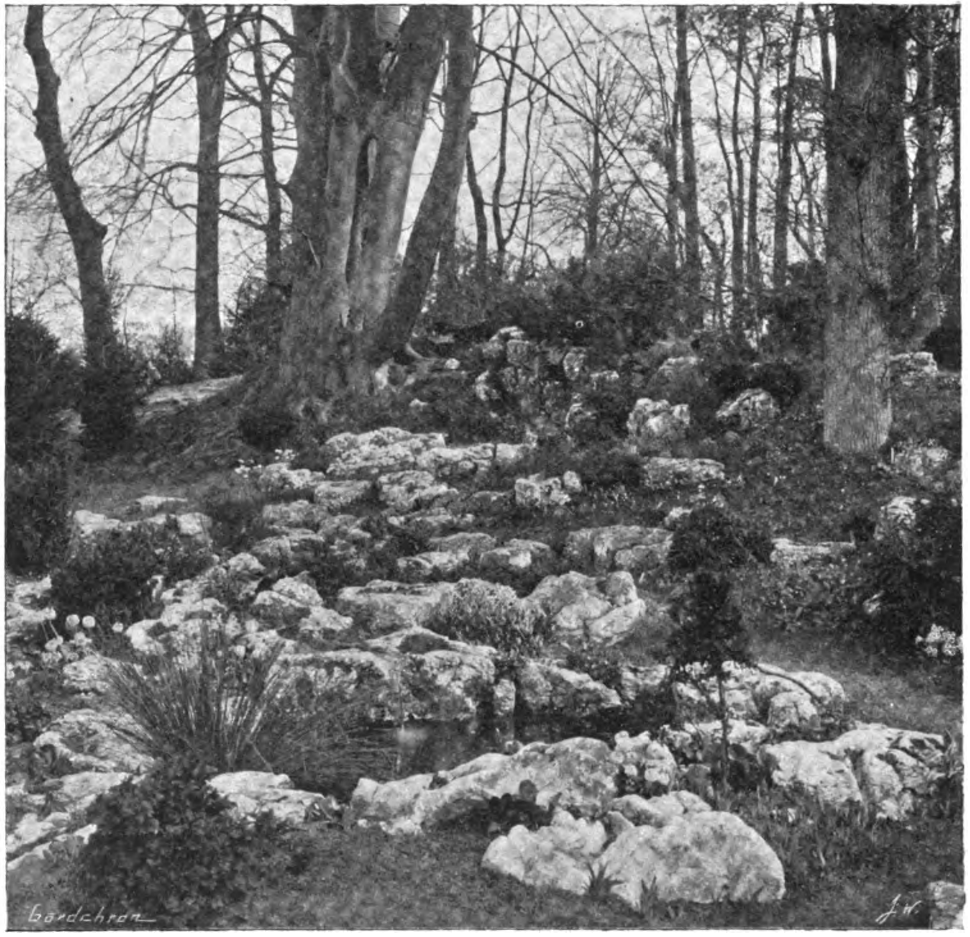

FIG. 131.—INTERNATIONAL HORTICULTURAL EXHIBITION AT HAARLEM.
Rock and water garden arranged by Messrs. H. den Ouden and Sons, Groenendaal Park, Heemstede.
(see p. 317).

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Salvia virgata nemerosa.—This variety of Salvia virgata, although seldom met with in quantity, is well worthy of a place in all flower gardens, and it is perfectly hardy in northern gardens. When grown in masses the effect of the deep, violet-blue flowers, set off by the bronze-red bracts and stems, seen either from a distance or close up, is very pleasing. Spring planting is best. Propagation may be effected by cuttings placed in cold frames in the autumn; these will give good plants for the following year. This Salvia flowers best if grown in fairly rich soil, but it does not like a damp situation. Slugs are particularly severe on the young shoots as they appear and have to be anticipated if good flowering results are to be obtained. Salvia virgata nemerosa flowers continuously from early autumn until cut down by frost, and is a valuable plant in any flower garden.

Edging Grasses.—Dactylis and Holcus Grasses used for this purpose may now be divided into sufficient quantities for use later. Some of the portions may even be potted, if time allows, for mixing with other bedding plants in the flower garden. If it be found that growth becomes too rank, cut over the resultant young foliage; by doing this the plants will present a much more tidy appearance.

Brussel Sprouts and Cauliflowers.— Plants of these Brassicas raised from early sowings made in heat should now be planted out without delay. Make a small sowing of Cabbages and Cauliflowers out-of-doors to raise plants for autumn use. Cauliflower Early London is a good variety to sow now.

Parsley.—Plants that were sown in heat will be growing in cold frames and may now be transferred to their permanent quarters. All garden soils do not suit this plant, and where this difficulty occurs it may often be obviated by mixing old potting compost with the soil and working it in with a fork before planting the Parsley. Wood ash may also be strewn over the ground. An outdoor sowing of Parsley may be made from now onwards.

Hoeing.—Work the ground well whenever possible between growing crops. Besides killing weeds and thus ensuring a clean garden, hoeing is especially beneficial to all young plants in keeping the soil moist during dry weather.

ALPINE GARDEN

HORMINUM PYRENAICUM.

My first acquaintance with Horminum pyrenaicum dates back for some forty or more years, when I met with it in the garden of a keen plant lover, the minister of a South of Scotland parish. It was an unusually interesting garden for its time, and contained a goodly number of uncommon plants. By devious ways the worthy and venerable minister led me to that part of the garden which contained what he considered his choicest and rarest plants. This was a frame, and there he pointed out to me with special pride and pleasure a plant of Horminum pyrenaicum in bloom. I must admit I was not impressed by its beauty. At that time it was said to be difficult to cultivate, but, although I cared little for the plant, I essayed its cultivation and found it quite easy in sun, in light soil, even without the lime it appreciates, but it ultimately found its way to the rubbish heap to make room for worthier flowers.

Lest I should be thought unduly condemnatory of this Horminum I would recommend those who have Mr. Reginald Farrer's *The English Rock Garden* to refer to what he writes about this plant on p. 416, in Vol. I., and they will there find what one can only call a scathing condemnation of H. pyrenaicum profuse in epithets such as he could use with effect. It may be asked: "Why write about the plant, then?" Yet it is well that those who know not the plant should be deterred from buying it, so that they may utilise their money and garden space to more advantage. It is a dingy and ineffective Labiate with spikes about eight-inches or nine-inches high, bearing small, dingy-purple flowers above dull-looking tufts of foliage. There are, or were, in cultivation, two white forms, the one with dull, white flowers, and the other, recorded by Mr. Farrer as one of his "finds." It was white with a purple edge. Recently seeds of a pink variety have been offered for sale, but I have never seen it, and have certainly no desire to do so. Botanically, it is interesting as the best of the dwarf or alpine Labiates, but it is vastly inferior to the greater number of alpines in cultivation. *S. Arnott.*

HARDY FLOWER BORDER.

BARRENWORTS.

The Epimediums or Barrenworts flower well in shade, thriving even better there than in sunshine, although they will flourish also with a fair amount of sun. They are generally woodland plants, delighting in a light soil, and producing numbers of their uncommon-looking flowers in April and May. Their leaves, like the flowers, are exceedingly pretty, and from the time they appear in spring until they wither in the end of the following winter are attractive objects from their colouring. They come with lovely tinting and pass off a fine bronze. I have employed the foliage of Epimediums frequently for decoration on the table in association with Snowdrops when the latter were in flower.

The Epimediums are dwarf plants, generally from six inches to about fifteen inches high. They are capital for the border or rock garden. Some may be raised from seeds, but all may be propagated by division of established clumps.

Considerable numbers are in cultivation, and those named below would form a representative collection, but a group of three or more plants of a kind would be admirable in the garden. They increase quickly in congenial conditions.

Epimedium alpinum, the Alpine Barrenwort, is only about nine inches high. It has delightful, bronzy foliage and flowers of crimson and yellow. It blooms from April until July.

E. colchicum is a dwarfer species only six inches high, and has good, yellow flowers, but these do not last so long as those of the preceding.

E. lilacinum is a delightful species whose colouring is a highly-pleasing shade of Lilac. The plant blooms about April and May.

E. macranthum is very pretty, with its soft, white flowers; it grows eight inches high. Those who wish a dwarfer white Barrenwort may secure E. Musschianum, which is only some four inches or five inches high and has small, white blooms. There is a carmine-red variety called E. m. rubrum, which flowers from May to July.

E. niveum is, perhaps, the best and purest white-flowered species. It grows about six inches high, has pretty foliage, and flowers in April and May.

E. pinnatum, which has sulphur-yellow flowers, is a fairly strong-growing plant with bold leaves and large blooms. E. Perralderianum is still stronger, and has good, yellow flowers. E. roseum is a charming species with delightful foliage and soft, very attractive, rose-coloured blooms. The last grows about eight inches high.

It should be added that the heights given are only approximate, and are greatly modified by the conditions under which the plants are grown, such as soil and situation. As is to be expected, plants in a rich, woodland soil under trees grow taller than those in poor soil in the open. *S. Arnott.*

INDOOR PLANTS.

FREESIAS.

Mr. Jacob's letter (p. 281) rather implies that I prefer the small, closed type of Freesia flowers to the more open and larger ones, and that I breed from them for preference. Let me say at once I am all for the larger, more open flower with segments standing at right angles to the tube, but there are good reasons why these do not appear. He also infers that my group of Freesias exhibited on April 7 was composed of the closed type of bloom and represents the Bartley strain. Let me point out that this group, which was, thanks to Mr. Felton's great help, admitted to be the finest group of Freesias ever staged at Vincent Square, was put up to demonstrate the decorative value of Freesias and not to exhibit the Bartley Freesias (as a Freesia group I was not at all pleased with it), and for this reason I cut every flower spike available, using discarded seedlings, good, bad and indifferent spikes, irrespective of colour, size, and form, and even the commonest mixed blooms were pressed into service. Had I intended exhibiting the Bartley Freesias I should have put up a very different group, and had Mr. Jacob shown a group of his Freesias, I know every one would have seen the difference and I should have hung my head with shame.

I know his Flame is better than my Golden King; the latter is an ancient, but no doubt Mr. Jacob wonders why I keep it. When I have worked up a stock of a thousand of a deep yellow like Golden King, but with a large open flower with the stem, stamina, and scent of Golden King, then I shall be prepared to discard the "ancient." I keep it not for its flower but because it serves its purpose, and there is no other variety on the market to take its place.

The American varieties that I have grown had good size and shape, but lacked substance of petal and strength of stem, and I discarded them, as the results of crossing to improve these faults were not successful.

I do not think Mr. Jacob can accuse me of favouring the closed type of flower like Golden King. The variety Wistaria is the only variety to receive a F.C.C., and this proves I prefer and can breed better things. Mr. Jacob does not mention one very important matter, and that is the strength of stem in the flowers I exhibited. I consider a strong, stiff stem in Freesias or in any flower absolutely essential. What shall it profit a man if he hath a Freessia of great size and wonderful shape and of marvellous colour, but with a stem as stiff as a piece of cotton and as straight as a corkscrew. What is the use of breeding huge flowers if the stem is too weak to hold them up. I don't think I showed many weak stems. I place good stems as the first point in breeding. I have noticed that nearly all the brightest coloured blooms are small. I get plenty of washy colours in big, open flowers. I specialise in coloured Freesias and, therefore, breed for colour in preference to size. I know Mr. Jacob has very good yellows, but I expect he finds size does not generally go with colour, such as mauve, blue, lavender, puce, Petunia, rose reds, and multi-coloured shades. I have many vivid colours, but in most cases the flowers are small compared to the two inch to two-and-a-quarter inch flowers of to-day, but they all have wonderfully stiff stems, much branched, carrying four or five side spikes which makes them very useful for decorating.

To sum up, I put the essential points in this order—stem, colour, size and shape, scent, general habit, and constitution, and if I could only get the colour into the larger ones as easily as I can in the smaller ones, I should find Freesia raising much easier. *G. H. Dalrymple, Bartley.*

CINERARIAS.

Few plants are so effective for conservatory or greenhouse decoration during the early months of the year, as the Cinerarias and the exceeding beauty and variety of their flowers make them highly desirable subjects for this purpose. The plant is of comparatively easy culture, makes rapid growth, is very succulent, requires generous treatment and an equable temperature. A good compost for the Cineraria is one consisting of four parts mellow, fibrous loam, to one part of decayed manure or good leaf-mould with a sprinkling of sharp sand; for the first potting a little additional leaf-mould may be added and for the final potting a sprinkling of bone-meal. The loam should be chopped up roughly and the manure and sand thoroughly incorporated with it.

The usual period for sowing the seeds is during May and June and generally the plants raised in May will be found the most valuable and make better specimens, but plants from a June sowing will be useful for prolonging the season the following March and April. Sow the seeds thinly in pans of sandy soil and cover them with a very thin layer of soil or silver sand. Place the seed pans in a cold frame and shade the soil from the sun until the young plants begin to show above the surface, when the supply of light and air should be increased.

Cinerarias grow so freely that it is not necessary to prick the seedlings off round the edges of pots or pans, but immediately they have made their second leaves they may be transferred to thumb-pots, taking care that the heart of the plant is not covered. The number of times the stock will require shifting depends on circumstances, but for ordinary conservatory decoration two shifts will be sufficient; specimens for special purposes may have three shifts. In both cases they should first be put into three-inch pots and when well established those that are to have only one more shift should be transferred to six-inch pots, the others into five-inch ones and finally into seven-inch receptacles. No definite time can be fixed for re-potting, but so soon as the pots are filled with roots the plants should be transferred to larger-sized receptacles and it is important that this operation should not be delayed or starvation commences; moreover, when the roots are much entangled they have a difficulty in striking out into the fresh soil. The soil should be pressed rather firmly but not very hard. Clean pots and good drainage are essential in every stage.

The most suitable position for the plants until the end of September is certainly a cold frame placed on the shady side of a wall where the plants may have an abundance of light without being exposed to the fierce rays of the sun. From the end of September until the flowers begin to expand, a heated pit facing south is the best position, although they will do very well in an ordinary greenhouse provided they are kept near the roof-glass and free from draughts. It is also highly important to use as little fire-heat as possible, just sufficient to keep out frost is all that should be employed. When exposed to a hot, dry atmosphere, the leaves curl and the plants make little or no progress.

The plants should be watered carefully at all times, especially during the winter. They should have sufficient moisture to maintain vigorous growth without being kept in a saturated condition, but they must not, under any conditions, suffer from drought. Soft water should be used whenever possible and when the pots are full of roots and the inflorescences are developing, frequent applications of weak liquid manure will materially assist in producing fine flowers of good substance. Frequent overhead syringings help to keep the plants clean and healthy. *W. Auton.*

ORCHID NOTES AND GLEANINGS.

SOME BORNEAN ORCHIDS.

Much interesting information connected with the introduction of plants has been lost for want of recording, and it is the duty of those who are in a position to supply details of incidents not generally known, to do so.

The collection of Orchids made for the late Hon. N. C. Rothschild, in Borneo, is a case in point, and it may be of service to publish the following particulars concerning the plants.

Early in 1911 I was asked to procure a young plant collector to accompany a party working in Borneo for business purposes, and I secured for Mr. Rothschild and another gentleman interested the services of Mr. Douglas A. Sinclair, nephew of the late Mr. Sinclair, for many years manager of the order department in the Chelsea firm of Messrs. James Veitch and Sons. Mr. Sinclair had not a free hand, but had to follow a prescribed route, localities he traversed being rarely supplied with the plants he sent home, but he did the best he could, and was a very satisfactory agent. At the end of his journey in 1913 he emigrated, and in 1914 it was reported that he had joined a colonial regiment, and was wounded in the Dardanelles region. Many friends in England would like to know how he fared later.

In the various consignments he sent home Coelogynes were plentiful, the larger ones, such as C. asperata and C. pandurata, being numerous, while the rare and curious C. peltastes came also in quantity, and there should still be many plants of it surviving. There were many plants of the pretty C. Motleyi, Rolfe n.sp. Occasional plants of other Coelogynes and Pholidotas of the country, some of which were recognisable and others unknown, promised interest in the future, and a very noteworthy new record was set up for the highland Indian Coelogyne elata, a dozen or so of which flowered out of this Bornean collection made by Mr. Sinclair.

The Dendrobiums received did not include any of the showy kinds, but D. microglaphys and a few others were pretty, and D. spurium J. J. Smith, the complicated history of which was given by myself in *The Gardeners' Chronicle*, June 29, 1912, from the Ashton Wold specimen.

Two pretty and specially interesting species recorded from the collection were Saccolabium glomeratum, Rolfe, and Sarcanthus robustum, O'Brien, both illustrated in *The Gardeners' Chronicle* from drawings made by my daughter when the plants flowered.

The late Mr. R. A. Rolfe took great pains to determine both these plants, and named the Saccolabium, but could not settle about the other, although he said he could find nothing comparable to it. So after more looking up of records of the Malay region, the drawing being ready, I took the initiative and published the species, and it has stood, I believe. There were but two or three plants of the last-named. Sarcanthi of the terete-leafed class were received in variety.

Other Orchids of interest in Mr. Sinclair's collection were Cleisostoma Wendlandorum, a large and handsome plant with long racemes of small, but pretty, flowers; some pretty Bulbophyllums, one or two of which turned out to be new, notably B. attenuatum, Rolfe, the graceful Appendicula bifaria; Eria major, Ridley, and others of the class, more noticeable by their graceful growth than their small flowers.

Several species of Liparis of the L. lacerata and L. cuspidata section and others flowered, which it is to be hoped are still living. Those which found a home at Kew will be safe, but others have been distributed, and these should be looked after as they appear. *James O'Brien.*

TREES AND SHRUBS.

RHODODENDRONS OF THE LAPPONICUM SERIES.

The species comprising the Lapponicum section of Rhododendrons include low, straggling, or erect shrubs, from a few inches to five feet high, having a tangled, wiry, or erect habit. They are natives, usually, of very high altitudes, up to 16,000 feet. The twigs and leaves when crushed have a strong, aromatic odour, are lepidote, the scales somewhat different and changeable in colour. The leaves are small, less than one inch in most of the species, dark or glaucous green, and bristly, but never hairy. The inflorescence is terminal, often comprising a cluster of one to eight flowers on short pedicels. The calyx is fairly large for such small flowers, thin, fringed, and variable in size and colour. The corolla is short, funnel-shaped, the colour ranging from violet-blue, purple shades, to mauve and yellow, but none to my knowledge is white; the throat of the flower is open or filled with hairs; the stamens number five to ten, are straight, spreading, or exerted, with the filaments hairy at the base. The ovary is small and scaly and the seeds very small.

The geographical distribution of the members extends from Greenland to Lapland, Siberia, Northern Canada, Western China, Tibet, and Sikkim. The natural habitats are diverse, but essentially alpine, and the plants are also found on lime-stone cliffs, rocky places, and marshy meadows, in shade and exposure.

Although these dwarf Rhododendrons are found in so many natural positions it is remarkable how well they succeed under cultivation when grown collectively. Seeds collected and sent from Western China, where many of the species are found, germinate exceedingly well, but plants of the earlier introductions in England ripen seeds, and these are most dependable.

The seeds are small and require to be sown with care. They must be scattered evenly and thinly over the surface of pots or pans. A suitable mixture for seed-sowing consists of equal parts loam, leaf-mould, peat, and gritty sand. Fill the receptacle with the compost, make the latter moderately firm, leaving half-an-inch rim space; water the soil well and allow time for it to drain. The surface on which the seeds are sown should not be too firm and smooth and merely covered with the gritty mixture. Care is still required in the subsequent application of water; when moisture is needed steep the pots in a basin containing water rather than water overhead, and place the pots where the soil will not dry out too quickly. Plunge them to their rims in moist fibre and germinate the seeds in a warm greenhouse, but see that the pots are not near heated water pipes. Shade the pans from bright sun. In three to four weeks the seeds will have germinated and the seedlings should be afforded more light and air and grown on a moist stage. Give the pots and seedlings an occasional mist-like spray, but not so much as to encourage the growth of moss and lichen amongst the seedlings. Continue to shade them. Take care that drip from the rafters or overhead waterings do not disturb either the seeds or the seedlings, and this will more likely occur if the soil surface was made too firm and smooth. In this case a remedy is to take a pinch of the gritty soil between the finger and thumb and cause it to fall amongst the plants. Seedlings that are disturbed curl in their endeavour to right themselves, and are not handled easily when ready for pricking off.

This work should be done so soon as they can be reasonably handled, using well-drained pans. Keep the plants growing in a cool and shady position and free from inclement weather. In due time transfer them to shallow frames, from which they may be transplanted the following year. For their tranplanting soil of the same character as recommended above should be used. Arrange so that the light may be removed at will, and later give the plants nursery-bed conditions until they are ready for putting in their permanent positions.

In addition to seeds these Rhododendrons may be propagated easily from cuttings as readily as Ericas, and in the same way. I have seen cuttings of both R. hippophaeoides and R. impeditum (two exteme types) merely dibbled into sandy soil in a cold frame in early autumn, almost forgotten during the winter and yet ready for a shift in the spring; I merely cite this as an instance of how easily cuttings may be rooted.

As regards soil for these Rhododendrons, plenty of good, mellow, woodland leaf-mould is necessary, and they do splendidly if the greater portion of the soil is sandy loam, leaf-mould, and a little peat, and I hazard a prediction that they would grow and thrive better than they do in their native haunts if more soil of a heavier nature is used and even less peat.

I have observed that roots of these Rhododendrons turn from soil largely composed of peat and become rampant in a top-dressing of well-decayed Beech leaves and fairly strong loam, which is more retentive of moisture. They are moisture-loving plants, and in this country do best in a damp season. As they resent dryness at the roots, the grower should anticipate drought and resort to artificial watering before the soil becomes excessively dry, afterwards top-dressing the plants with leaf-mould to conserve the soil moisture.

When the plants are large enough to be planted out this may be done any time during early spring. Make the soil fairly firm around the roots and set them in positions as naturally as possible for them. Certain of the species are only tuft-like in habit when several years old so are easily accommodated at the foot of a stone or other projection. Sheltered or semi-sheltered bays make good homes for them, and there need be no fear if they are exposed to cold and frost. Ideal positions for them are the margins to mossy, meandering, semi-shaded woodland walks, or in nooks by the side of oblique terrace tracks.

The species are numerous, and those below are described more from the horticultural standpoint than a botanical standard.

R. lapponicum.—This species is symbolic of the series, but it is seldom seen in gardens. I have not seen a good plant in flower and can only judge of it from dried specimens and young living plants. R. lapponicum is found in Greenland and widely distributed through Lapland and on to Northern Canada. It is a loose, spreading bush a foot or so high with purple flowers which appear singly. It is not a great success in the South of England, and requires shade and moisture.

R. parvifolium, a nearly allied species, is the first of the series to flower; I have seen it display its welcome rosy-purple flowers on New Year's Day, and only slightly damaged after ten degrees of frost. It is found in Siberia, and north-east Asia. In habit it is a sparse—but upright-growing—bush, not dense, about three feet high, having small leaves and an inflorescence with three to six rosy purple flowers. I have never seen it mature seeds.

R. orthocladum.—This species takes the lead amongst the Chinese group, and last year the flowers opened on the first day of April. It is one of Forrest's introductions. While in flower it endures cold and biting winds with impunity. Each year established bushes never fail to flower. It is a well-shaped, somewhat conical plant with neat, twiggy growths, different from all kindred species that I know. The small, narrow, lanceolate leaves are held outright; the inflorescence is terminal with three to six flowers, each half-an-inch or so across and of a lavender shade. Plants raised from introduced seeds show variation, but some of the seedlings are unworthy of a place beside the best of the congeners. *C. F. C.*

(To be continued).

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

Of our three indigenous species of Squill, every country child knows and loves what in England is called the Blue-bell, a name exclusively reserved in Scotland for the Hare-bell (or should it be written Hair-bell ?). I have never seen Scilla autumnalis, which is confined to some of the southern counties of England; and I have never met in any garden, except our own, the third species, Scilla verna, which grows abundantly on many parts of our northern and western coasts. Yet it is a plant which well repays cultivation, spreading into broad patches with crowded racemes of delicate blue flowers. In the close, wind-swept turf which it inhabits near the sea it rises no higher than three or four inches; but in the shelter of a garden the stiff flower stems average six inches long. The plant sows itself freely, springing prettily in odd crannies of rock-work. Moreover, whereas in the garden it remains in full flower throughout April, on the sea-coast less than a mile distant one cannot find a blossom before late in May. This plant only requires to be better known to become a favourite. Dibbled among an edging of mossy Saxifrage it gives a charming effect.

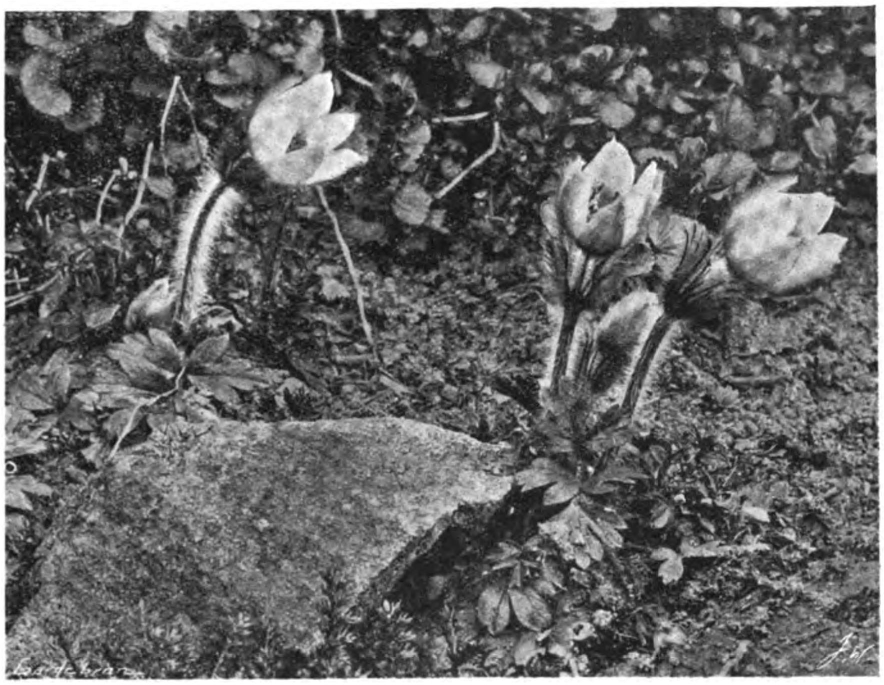

FIG. 132.—ANEMONE VERNALIS.

Those who care for vegetable freaks should grow the Purple Toothwort—Lathraea clandestina—a herb of sinister habit, being a true parasite and, as such, probably degenerate, but desirable for the bright carpet of Crocus-purple which it spreads over the turf in early spring. It is closely related to the Broomrapes (Orobanche); but whereas the members of that genus grow on the roots of herbs or small shrubs, the Purple Toothwort attaches itself to those of the Willow or Poplar and, perhaps, other large trees which suffer no injury from its presence. It is very easily established; all that is needful is to poke in a sod of it at the foot of a Willow in moistish ground. Probably nothing will be seen of it in the first season after planting; but in January of the second year it will push up white, scaly knobs, which in due course will open to release, not leaves, for the Toothwort dispenses altogether with foliage, but stalkless flowers that you will be apt to mistake for those of a stunted purple Crocus. These last a long time in modest splendour, to be followed by dark, fleshy capsules, specially equipped for the dispersal of the seed; this is of much importance for the perpetuation of so lowly a herb which spends half the year underground. The device is very effective. Each capsule contains a brace of seeds, and so soon as these are ripe it flies open, flinging them far from the parent plant.

The only British species of Toothwort—Lathraea squamaria—is widely different in appearance from L. clandestina, for its dense spike of flesh-coloured flowers grows from six inches to a foot high. It is always unwise to indicate the locality of any of our rarer wild-flowers, but in the case of this parasite, which it is impossible to transplant, there can be no risk in mentioning that nowhere have I seen it in such abundance as in the valley of the Kennet, near Ramsbury, where it is crowded on the roots of many trees.

The doubt which I expressed about a species of Comfrey labelled here Symphytum tuberosum (page 284) has been resolved. It is the Caucasian plant S. grandiflorum, and is figured in *Bot. Mag.*, t. 8944.

March and April are the most disquieting months in the year for those who set their fancy on early-flowering species of Rhododendron, especially when the preceding winter has been so mild as to promote young growth. That has been the case in the past season; but we have got off cheaply during the critical months. True, a snap or two of frost amounting to seven degrees on the ground destroyed some bloom on the earliest R. barbatum, R. arboreum, R. lutescens and R. pachytrichum; but the majority of species have escaped disfigurement. On the whole it is a poor flowering season; but R. Thomsonii and its hybrids never were more brilliant, and R. Fargesii has been loaded with bloom. A huge specimen of R. fulgens at Castle Kennedy has made a magnificent display, sixteen feet high and as much across, its branches weighed down with blossoms only to be numbered in thousands and the ground spread with a scarlet carpet of shed flowers. There are inferior strains both of this species and R. Thomsonii, rendering it desirable for purchasers to see plants in flower before investing.

Another enemy than frost has been at work to tarnish the display on some Rhododendrons. It was exasperating to see the mischief wrought by tits on a splendid bush of R. Hookeri at Logan, nearly every flower being split open to get at the honey. *Herbert Maxwell, Monreith.*

NOTES FROM WISLEY.

A noticeable feature of the trial of newer Narcissi in progress at Wisley is the great size of the flowers of most of the trumpet varieties. These large-flowered sorts are undoubtedly showy from a distance, but on closer inspection individual flowers are often badly proportioned and show a tendency to coarseness; an exception is a self-coloured yellow variety named Sanda.

Following on the earlier sorts are some very attractively coloured blooms of the Poeticus and of the Incomparabilis groups of which Burnet is a handsome-flowered member. In some instances traces of the influence of Narcissus cyclamineus and N. triandrus are in evidence, and a novelty is found in Double Cheerfulness, a double-flowered poetaz variety. It is interesting to note that in the long grass of the small pinetum in front of the laboratory some sweetly-scented single and double-yellow Jonquils are in flower and appear to be well established there.

Adjoining the trial of Narcissi is a Delphinium trial, the plants of which are in their second year and look as if they will make a good show this summer. Some handsome Tulip species are now in flower, of which the most brilliant is the vivid, flame-coloured Tulipa praestans with its black filaments. A variety of this species, T. p. Tubergenii, which has red filaments and a Plum-coloured ovary, is also in bloom. Another striking species is the bright red T. Eichleri, with a yellow-margined base of black, which is flowering in company with T. sylvestris which grows wild in certain parts of Britain. Attractive bronze and green shades adorn the reverse of the flower of T. dasystemon, which is white, suffused with lemon-yellow. T. Clusiana has also a pretty reverse to its perianth, which is white within, with a maroon base, and red without.

In the rock-garden Anemone vernalis (Fig. 132) is blooming. This pretty little plant occurs naturally in the high alpine meadows and its flat tuft of finely-divided foliage, which persists through the winter, is enhanced by a bronze pubescence which extends to its opalescent blossoms. In the alpine house a pan of Androsace helvetica (Fig. 133), another denizen of the high Alps, is in flower. This plant is not difficult to grow in this country if given conditions which approximate to those under which it thrives naturally. It does best wedged in a crevice between pieces of limestone where it will form a neat evergreen cushion from which spring little white flowers with a gold centre.

Many ornamental flowering trees are now at their best. Some of the most striking are to be found in the field garden where Pyrus purpurea, P. Niedwetzkyana and seedlings of the latter are in flower. In the same border is a large plant of Prunus tomentosa, a quick-growing, flowering Peach, introduced by Forrest. Some interesting seedlings of Cydonia Sargentii are also flowering in the field garden and many of them differ in marked fashion from their parent. One of the best has bright rose flowers while others resemble Apple blossom or are orange like their parent. Perhaps the best shrub in the Wisley gardens at present is Viburnum Carlesii which, although a slow grower, seldom fails to produce an abundance of deliciously fragrant blossoms.

Many Rhododendrons are in bloom including R. caucasicum, R. Thomsonii and the yellow R. lutescens. There are also many fine varieties of Rhododendron arboreum and of R. campanulatum. A striking hybrid which is thought to be a cross between R. campanulatum and R. Thomsonii is to be found in the wild garden and has bright puce flowers. *J. G. White.*

INTERNATIONAL HORTICULTURAL EXHIBITION AT HAARLEM.

Rarely, if ever, has an international horticultural exhibition had such a charming setting as the one now being held at Haarlem. Everyone privileged to visit this great effort made by the Dutch growers must have been surprised and pleased with the permanent exhibition, even though they may not have admired every detail. Groenendaal Park, at Heemstede—a suburb of Haarlem—is an ideal place for such a show, and those who planned the exhibition took full advantage of its lake and stream, its pleasing undulations, and its delightful woodlands, as well as its extensive level areas. A plan of the grounds was given on p. 181 (*Gard. Chron.*, March 14), and reference to this will give an idea of their extent and the general disposition of the various kinds of plants and flowers. But neither plan nor any number of illustrations in black and white, or in colour, could convey an adequate idea of the beauty and interest of the whole effort, as seen towards the end of April.

The spaces around the exhibition hall have been treated more or less formally, and a wide, level area in front of the hall is occupied by a formal garden, in which great beds of Hyacinths and early Tulips provided a feast of colour at the period stated. Tulip Van der Neer is magenta purple, and probably more popular on the Continent than at home, but, nevertheless, it is a fine Tulip. A double Tulip, Mr. Van der Hoef, is worthy of note as a dwarf, late-flowering sort. Couronne d'Or, as seen at Heemstede, is of glorious, yellow colouring and a very sturdy Tulip, while Yellow Hammer is a useful, pale yellow Hyacinth for bedding. The light blue Hyacinth Queen of Blues is very pleasing, and everyone knows what a good sort the light blue Grand Maitre is. Lord Derby is another fine old Hyacinth, but its blush colouring is a trifle too dainty for the atmospheric impurities of town gardens. Yet another blue Hyacinth of excellent form and soft, blue colouring, is Perle Brilliant. Tulips are already fine, but there are hosts of later varieties to carry the display well on towards the end of the exhibition. The season seems to be a trifle later than in the south-west of London, consequently Tulip Vuurbaak is only just opening its flowers, while Orange King is even later, but the pale yellow Theeroos was just opening, and Murillo varieties were already making a bright display. Here and there at interesting points, and to mark the corners of the garden, clipped trees are planted.

Behind the exhibition hall are several Dutch gardens, each with its own enclosing hedge, and some of these are good, others not so good. In certain examples the Daffodils have been packed too closely in comparatively small beds, while the selection of varieties has not been exercised with sufficient care, and so the giant varieties King Alfred and Emperor appear to be struggling to get over the hedge and into the open spaces. Such Daffodils as Lucifer, Will Scarlett, and Croesus are freely planted and in fine condition. Hereabouts also are several collections of clipped trees showing a great variety of form and size, chiefly carried out in Box and Yew.

But it is beyond the formal part of the exhibition, in the woodland and by the lake and stream sides that the great beauty of the exhibition is to be found. In addition to broad plantings of Rhododendrons, Azaleas, Japanese Maples, flowering Cherries, and other delightful subjects to provide a display at a later date, no fewer than three million bulbs have been planted, mostly in great drifts, where their glory is reflected in the water, or in undulating masses under the thinly planted Elms, Poplars, Limes, and Beeches with which Groenendaal Park is amply furnished. The Daffodils range in colour from the white ornatus and other Poets to the rich gold of King Alfred and the deep orange tones found in the cups of many Barrii varieties. Having seen these woodlands flooded o'er with flowers in sunshine and in rain, one desired to see them by moonlight, for certainly they would look exquisitely beautiful then. Queen of the North, King Alfred, Lord Kitchener, Tresserve, Mt. Erebus, Empress, Van Sion, Emperor, Telamonius plenus, Horsfieldii, and many other Daffodils, some old and some comparatively new, have been planted freely and grouped in an informal manner, but gently conforming to the pleasing irregularities of the ground and to the winding of the paths (Fig. 136). Along some of the higher slopes there are rock gardens, but few of these are really pleasing. In certain of them there was too much stone and too few plants; in others no basal idea or plan appeared to have been followed, but some were quite charming, and particularly the one arranged by Messrs. H. den Ouden and Son, of Boskoop (Fig. 135).

Mr. C. G. Van Tubergen has planted a woodland space with many choice subjects, species of Tulips, species and hybrids of Iris, Primulas in variety, masses of Dog's Tooth Violets—Erythronium White Beauty is a lovely thing—dainty patches of Anemones, Mertensias, Hepaticas, Muscaris, Jonquils, and hybrids of Narcissus triandrus, the whole creating a charming and vastly interesting woodland garden.

Some of the garden ornaments in the formal parts of the exhibition are extremely weird and "quaint conceits" which do not accord with British ideas of beauty and suitability. Nevertheless they serve a useful purpose, that is, to provide a text for criticism and also a forcible contrast to the exquisite beauty of the informal parts of the grounds —beauty of form and colour that is worth crossing the North Sea to view. *C. H. C.*

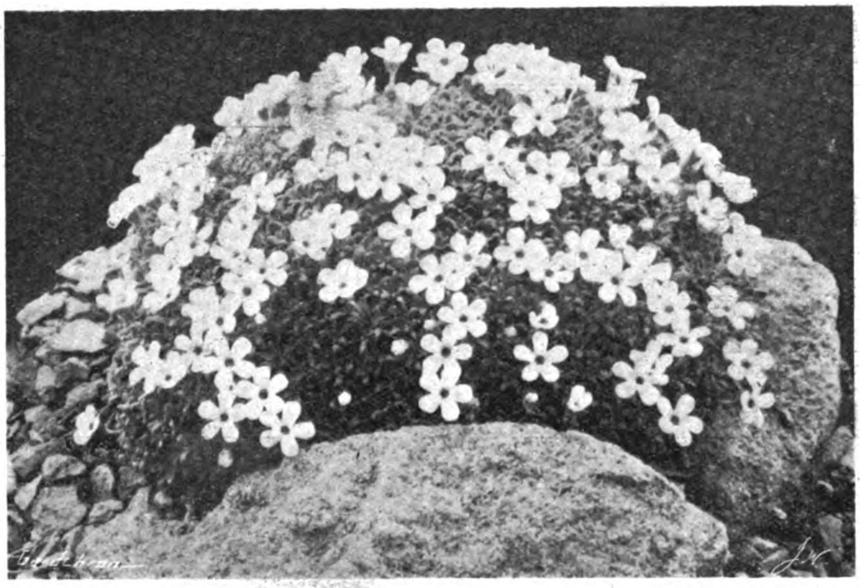

FIG. 133.—ANDROSACE HELVETICA.

PUBLIC PARKS AND GARDENS.

Ex-Councillor W. H. Stansfield, who on many previous occasions has presented valuable gifts to the Southport Parks Committee has sent a parcel of plants to Hesketh Park. The gift includes one hundred specimens of Berberis Darwinii, fifty of B. Thunbergii, fifty of Cotoneaster horizontalis, one hundred of Deutzia Lemoineii, fifty of Forsythia vitellina, one hundred of Sophora japonica, six of Cerasus James Veitch, six of C. Sieboldii, two of Elsholtzia Stauntonii, and two of Hydrangea. Mr. Stansfield has just finished a tour in France and Italy where he has been collecting botanical specimens, and amongst the many places of interest he visited were the world-famous gardens of La Mortola, Ventimiglia.

Sir Joseph Hood has presented £100 to his native town, Ashby-de-la-Zouch, for the making of a recreation ground.

The Town Council of Ealing has decided to apply to the Ministry of Health for sanction to borrow £51,070 towards the joint purchase, with the Acton Council and the Middlesex County Council, of Gunnersbury Park for £125,000 as a public park.

The Corporation of Doncaster proposes to spend a sum of £2,000 in improvements at Elmfield Park. The work will include the making of a paddling pool, the providing of swings, a bandstand, and childrens' corner.

The Ministry of Health has sanctioned a loan of £5,259 to Lowestoft Corporation in respect of the acquisition of a portion of the Normanston Hall estate for a recreation ground.

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MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.

IX.—SUMMER FLOWERS.

So far I have written little about Primula and less about Meconopsis, two genera which, after Rhododendron, are perhaps the most intriguing in present day horticulture. I must now remedy this omission.

Primulas began to be embarrassingly numerous in June (1924); and during our first week in camp we found eight species in flower, and two more coming on. Climbing up towards the pass, we noticed, first, bogs covered with rosy patches of a Primula probably allied to P. Wardii, but much smaller, not exceeding four inches in height when fully grown. This was evidently the plant we had found in fruit weeks before, as previously recorded. Despite its lack of stature, it is a bright little plant for the bog garden, its rich, rose-crimson flowers contrasting sharply with the Buttercup gold-spangled bog. But it is a plant for the enthusiast only; it will never be popular. It recalls rather P. fasciculata.

The next species to catch the eye was not unlike our old friends P. chungensis and P. Cockburniana. but with flowers larger than either, of fiery orange ending in blood-orange tubes, which show up splendidly against the mealy white calyx. It is a shade-loving plant growing always under trees, in damp ground, where it forms drifts of Oriental splendour. This was the first "Candelabra" we had met with.

Higher up, our now familiar friend, the "Denticulata" Primula still persisted, though down below it was already seedling; the pastures of the *rong* had been absolutely mauve with it. The further we penetrated into the mountains, the more numerous and varied became the Primulas.

After the "Candelabra" came the Cherry-red "Sonchifolia," a very adaptable species, with a vertical range of three thousand feet or so, and equally at home in forest or alpine pasture; it is much more effective, however, as a woodland plant. Sometimes the flowers are so dark as to be almost black; but I could trace no relationship between flower, colour, and habitat. We found and marked a curious albino, with milk-white flowers and an anaemic "eye." Like some of the "Nivalis" tribe, this species has a rather unpleasant odour; but there is no necessity to smell it. Unfortunately, it is one of these fat-necked rascals, which sometimes prove rather stiff-necked when opposed to our climate. At high altitudes—from about 14,500 feet upwards—it was replaced by a fine purple-flowered "Nivalis" species, with star-shaped corolla; this grew scattered amongst the dwarf Rhododendron.

In the very wet pastures of the *rong*, and in alpine bogs generally, flourished a beautiful Primula of the "Sikkimensis" type, with pale Primrose flowers, delicate as moonlight, distilling an exotic fragrance—another prize first noticed by Cawdor. It grew about eighteen inches high and had its counterpart in a four foot giant with dark, sulphur-yellow flowers, smelling of Cowslips. This latter demanded shade, and really belonged to the forest, where it formed large colonies in running streams, provided they did not run too fast. Indeed, it might often be seen hoisted up on its fleshy, pink roots amongst the pebbles, as though stayed with flying buttresses. Its large, rounded leaves are borne on long petioles and form a stiff crown surrounding the high scape. Whereas the flowers of the pale-faced one are limited in number, and all droop in a bunch to one side, those of "giant-sulphur" are very numerous—more than twenty—and spill over in a fountain of big gold drops on all sides. There is no confusing the two species in flower, though immature plants are apt to resemble one another; but if anyone wants the analysis carried further, it may be stated that the corolla of "giant sulphur" is narrow-bell shaped, with pointed lobes; that of "moon-face" (as we may call it) is saucer-shaped, with rounded, cleft lobes. These two Primulas are, in my opinion, the most graceful of all we have seen. Indeed, the wet pastures of the *rong* were a maze of colour in June, with sheets of the pale one, like patches of moonlight, interrupted

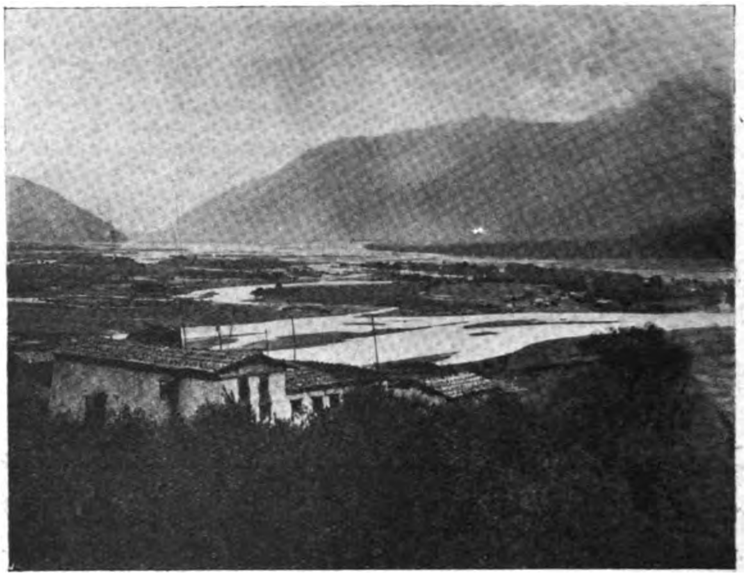

FIG. 135.—THE JUNCTION OF THE NYANG-CHU AND THE TSANGPO.

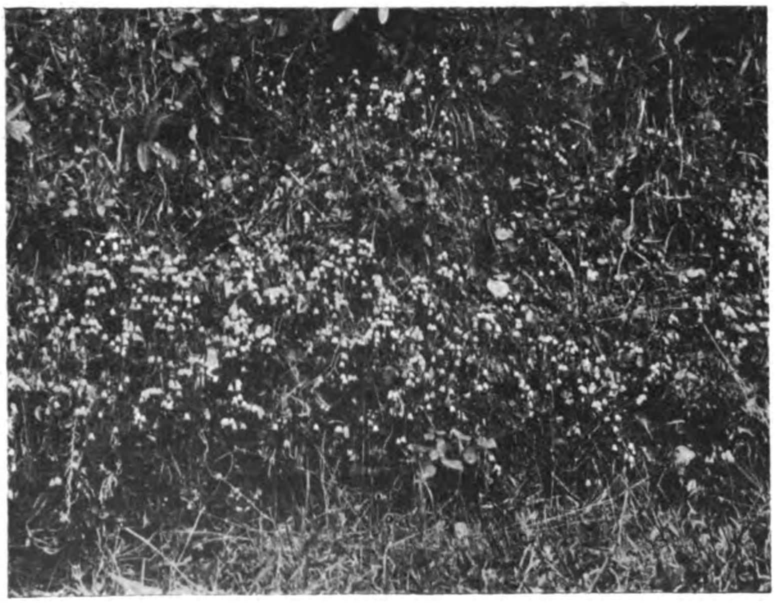

FIG. 134.—CASSIOPE SPECIES DISCOVERED BY MR. F. KINGDON WARD.

The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30. September 27, November 1, 1924, and April 4, 1925.

by shadows of orange or crimson Lousewort, and other decisive colours.

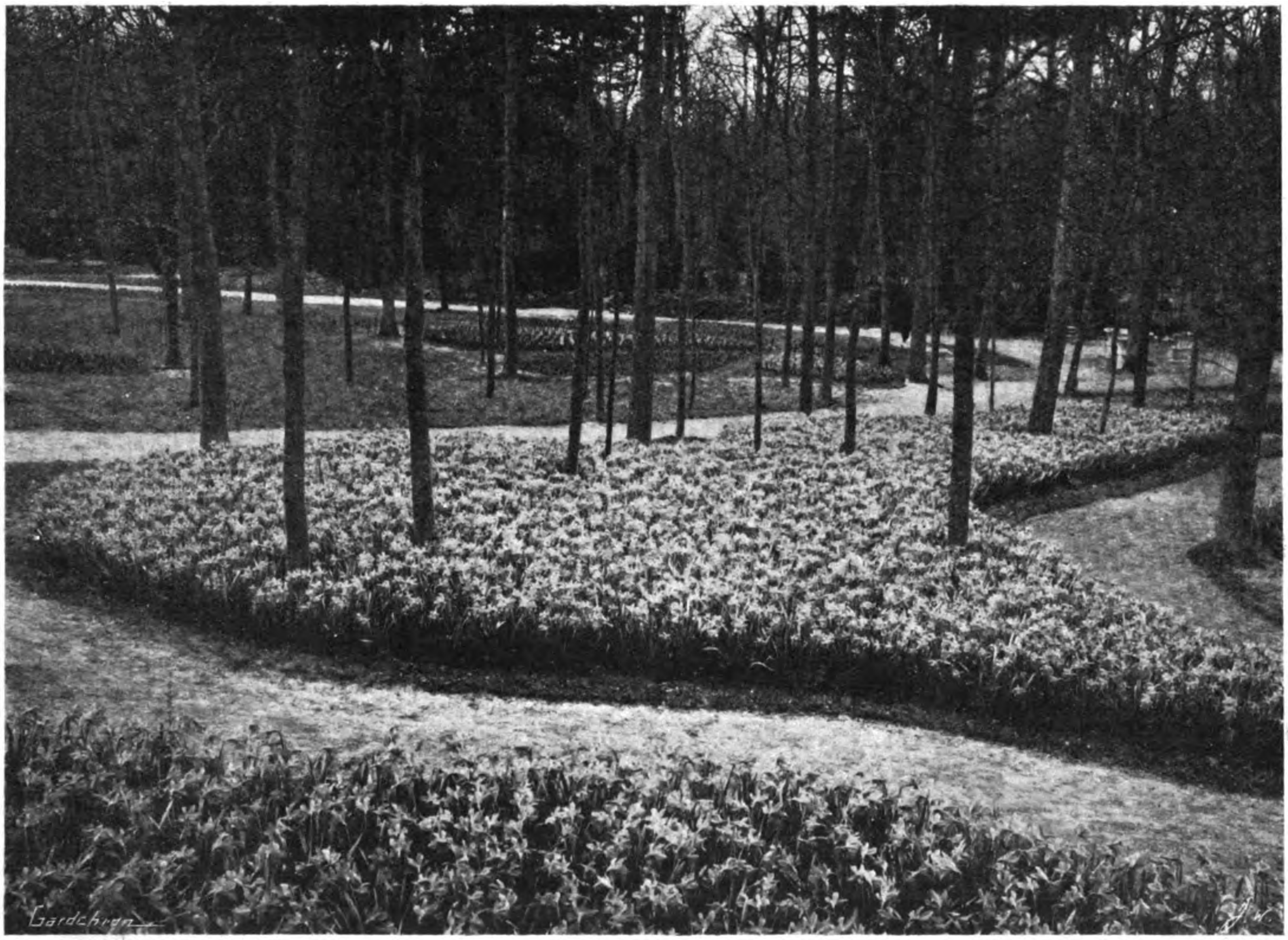

FIG. 136.—INTERNATIONAL HORTICULTURAL EXHIBITION AT HAARLEM.

Daffodils in Groenendaal Park, Heemstede (see p. 317).

June rather than May is the month of Rhododendrons in this country; and July rather than June is the month of Primulas. True, by the end of June the orange "Candelabra" had opened its fifth and last whorl of flowers, while those below had already passed away; the Cherry-coloured "Sonchifolia" was over, at least in the woods; and the "Denticulata" was in seed. But it was in July that the meadow Primulas of the "Sikkimensis" section attained their full stature and beauty; that many of the high alpines bloomed; that the two "Muscarioid" species were at their best—nay, the quaintest of them was not in flower till July; and it was only in the last week of June that we discovered some of our finest species, just coming into flower.

Truly, we found some strange and unexpected species. Pleasant as it was to cut adrift from the traditional hunting ground of all the plant collectors during the past thirty or forty years—Western China—and break new ground, still it was intensely interesting to find links with that region.

I have already referred to the orange "Candelabra." Even more exciting was it to find a species of the "Maximowiczii" section! These curious flowers are said to belong to North China—a contention which is no longer valid. Certainly no one ever supposed they would turn up in the Himalayas, as one of them assuredly has. As a matter of fact, Primula szechuanica occurs so far west and south as Damyon, on the Mekong, where I found it in 1922; but even so it is a far cry from the Pitu La to the Verma La—not less than three hundred miles as the crow flies.

Can our plant be P. Maximowiczii itself, by any chance? It has dark chocolate-red flowers, something like that species. But P. Maximowiczii is a plant of Kanou, which is even more remote than Szechwan; and knowing how the species vary from range to range and from valley to valley, we conclude that they are entirely different species. Our plant has a delightful fragrance, which is wanting at any rate in P. szechuanica. Like the latter, it is a tall plant, often producing two whorls of flowers, with the typically reflexed petals of its class, though not so fully reflexed as in P. szechuanica. It grows in the forest, opening towards the end of June and flowering throughout July.

There is only one known species of Primula belonging to the charming Muscarioid section, native to the Himalaya—P. bellidifolia. It was the first known of a group subsequently found to be prolific of species in Western China. We have recently found two more species, forging yet another link between the Himalayan and Chinese floras. One of these has fragrant flowers of a beautiful Lavender shade, and of the ordinary type, forming a small spike about as large as that of P. Geraldiana or P. deflexa. But the other is rather different. The flowers are few—six or eight; the corolla is four times as long as the calyx (an inch-and-a-quarter long in fact), and toothed, the teeth themselves being three-eighths of an inch long and bifid. To add to the strange effect thus produced, the flowers, instead of being arranged in a regular manner round the top of the scape are clustered to one side, with the result that, with their fringed corollas, they appear to be trailing on the wind. The flowers are rich violet, and the plants grow in colonies, which it would be well to imitate on the rock garden; attaining a height of only six inches, our curious "Muscarioid" Primula is well suited to a place there. The orthodox "Muscarioid" is a plant of moist pastures—sheltered banks and such like.

I have written of two species of the "Sikkimensis" type; but there is another, and that a particularly interesting one. So far no purple-flowered "Sikkimensis" has been recorded from the Himalayas, though two—P. vittata and P. secundiflora—occur in China. We have now found one in the Himalayas. I have written of it as a "purple" flowered one, but it is many other colours besides, occasionally claret, violet, cream, and milk-white, to mention a few varieties. It appears to be quite undecided as to colour. It is a plant of the open meads, and is found, too, lining the forest paths, wherever the ground is not too boggy and the light not too dim. Growing a foot or eighteen inches high, it rivals in fragrance even "moon-face." In all its chameleon changes of colour, it possesses one character which is constant—the interior of the cup is always thickly powdered with a broad band of white meal, the limits of which are sharply defined. In violet-flowered specimens this is an improvement; in claret and purple flowers it gives a queer effect of crushed Strawberries and cream; in milk-white or pale cream specimens it is beautiful.

These three were not the only "Sikkimensis" Primulas met with; there was a fourth, found in pastures at about 15,000 feet altitude, opening in July. It was not fragrant, and bore a superficial resemblance to P. flexilipes, or one of the smaller alpines of that type.

There are a number of minute alpine Primulas in this country which call for the attention of the botanist, though they are of little interest to the gardening enthusiast. Four we found, one of which is worth a place in the rock garden. It has large, solitary, crimson flowers, almost flush with the ground, but it is rare, or at any rate local, and we are not likely to secure seed of it. In this connection I may mention that we saw no Primula of the "Bella" group, which was rather surprising, when we consider how many links there were with both the Sikkim and Chinese alpine floras; it seemed just the country for the little, starry, violet P. bella.

What we did find instead was a dwarf alpine "Nivalis" Primula recalling the late lamented P. minor, but superior to it in being delightfully fragrant. Like P. minor and others of the same breed, the flower colour varies—violet, mauve, purple, with a large white "eye." It forms drifts and threads of colour in the high alpine pastures.

And then there was our prize "Nivalis," with flowers of a wonderful smoky blue, or dusky Periwinkle, and leaves of malachite green veined with alabaster. It also flourished in the alpine region, often growing with the purple and dwarf Nivalids. It is, I think, one of the most lovely Primulus of this splendid group, more beautiful even than P. calliantha, which, when I first saw it many years ago in the dim, wet jungles of the North-East Frontier of Burma, I considered the most beautiful of its kind. It is a pity the Nivalids as a race are so difficult of cultivation that they can never be popular plants; with the exception of the dwarf alpine species, too, their odour is against them. P. chionantha, however, appears to be an exception, as it is not difficult to cultivate.

As for alpine Poppies, I have never seen such a country for them. Many a time have I stood on a mountain slope and counted four or five species in flower together, and all visible at the same time; you cannot have that experience in Sikkim, or in Yunnan, or Szechwan either. Indeed, Sikkim, which has been explored from end to end by generations of botanists, is known to possess only about eight species, and the entire Himalaya from Bhutan to Kashmir, not more than fifteen. Szechwan has given us about eight species, Yunnan another ten, Kansu perhaps four—some twenty-two species for the whole of Western China after years of assiduous collecting by numerous collectors.

At the outset of our exploration in this country we have found eight species. The first to flower, opening its sky-blue petals in the first week of June, was a fine woodland species. It is a perennial, growing always in the shade, between 10,000 and 13,000 feet altitude—quite a good range for a Meconopsis. The radical leaves are petiolate, often very large, as much as a foot or fifteen inches long; the stem leaves are sessile, with sinuate margin and auricled base. The main stem ends in a single flower, and the other flowers are borne singly on axillary pedicels, the upper two or three usually springing up almost to a level with the terminal one, forming an apparent cyme. What species is this? So far I can only assert that it belongs to the section Polychaetia, possibly to the Robustae group; is it by any chance the long-hoped-for M. superba of Bhutan? But that has white flowers! Certainly it is a fine plant, growing three feet high with large, showy, four-petalled flowers, sky-blue with golden anthers; and though not fragrant the flowers are more lasting than in many species. It has every chance of proving hardy, for in the first place it does not come from a high altitude, where extreme conditions prevail, but from intermediate altitudes within the forest belt; secondly, it has an ample vertical range, not less than 3,000 feet; thirdly, it is a woodland plant—let no one try to grow it in the herbaceous border, for which its stature might seem to fit it—and therefore thrives under more stable conditions than are found in the open; fourthly, and lastly, it is perennial.

The next met with in flower was a charming alpine with large, sky-blue, sweetly fragrant flowers borne singly on basal scapes—undoubtedly M. simplicifolia, or a form of that widely spread species. It grows about a foot high, producing three or four scapes, and is found in little colonies of maybe half-a-dozen plants in sheltered situations under bushes. I have seen it on most of the local passes at between 14,000 feet and 16,000 feet altitude, and on both sides of the river. M. simplicifolia is, or has been, in cultivation, but unfortunately it is not perennial.

Sir David Prain's suggestion, that M. simplicifolia is really a Tibetan plant which has crossed the Himalayan passes between Nepal and Sikkim, receives considerable support from its occurrence so far north. *F. Kingdon Ward.*

VIRUS DISEASES AND THE GRAFTING OF THE HOP.

THE Hop, like many other plants at the present day, is beginning to be affected by that mysterious class of diseases of which the cause is a "virus." One of the most ominous signs of failing health among plants generally, which perhaps threatens the Vegetable Kingdom itself, is the appearance, year by year, of a virus disease in some plant of economic importance. Sometimes, as in the case of the Potato, a medley of virus diseases attacks the unfortunate plant. All gardeners by now are more or less familiar with "leaf roll" and "mosaic," but almost each year some fresh form of virus disease appears, producing new disease-symptoms in the shoots or leaf of the Potato. These diseases, as they are worked out by a band of assiduous workers, are given distinctive names indicative, so far as possible, of the particular malady, such as "crinkle," "Aucuba-spotting," "curly dwarf," "rust" and "stipple-streak." If the process continues, it would appear that after a time the virus diseases of the Potato will be so many that only a gardener who has taken a course of memory training will be able to cope with the long catalogue of names!

In the case of the Hop, there are only two virus diseases known—at present. One of these is called "nettle-head," or (in Sussex) "silly hill," and at one time, as the "eelworm disease," because in the first instance the cause of the disease was wrongly ascribed to the attacks of an eelworm. This disease has been known for fifty years and more; it stunts the affected plant and renders it sterile or nearly so, but does not kill it, and the disease does not usually spread quickly through the hop-garden.

The second form, the mosaic disease, first appeared about twenty years ago and has every appearance of becoming a persistent scourge of the Hop-garden. In the first or second season the hop plant is rendered completely sterile, the stems become brittle and unable to climb, the plant never recovers and soon dies. The disease is extremely contagious, and where it appears on a plant in any one year, "hill" after "hill" down the alley falls a victim in succeeding seasons.

There is a further disquieting feature characteristic of many virus diseases. A plant may become infected with a specific virus, yet show no signs of disease, cropping and behaving like a normal healthy member of the vegetable world. Yet all the while it may be infected and instrumental in spreading the disease, usually through the agency of insects, which, visiting the plant, suck or bite out with their food some of the sap containing the virus (believed to be bacteria of so small a size that they are invisible under the microscope) and transfer it to a healthy plant. Such a plant is termed a "carrier."

Some recent work by Dr. Bewley on the Mosaic Disease of the Tomato has shown that "carriers" exist here; these are sometimes commercial varieties of Tomatos which appear healthy yet communicate the disease to susceptible varieties among which they may be cultivated; or the carrier may be the not uncommon wild plant or weed known as the Black Nightshade (Solanum nigrum).

With the Hop also—although here the evidence is only circumstantial at present—it appears that "carriers" may exist. A certain new seedling Hop (reference number "M45") was raised in 1909 at Wye College, and, proving in tests to have considerable commercial promise, it was propagated and sent out in small lots, in 1919, to certain Hop-growers to be tested in their Hop-gardens. On more than one farm two or three years later, the following phenomenon was observed:—the plants of M45 were healthy, green and thriving, while all around them were dying plants of the surrounding commercial variety which showed all the symptoms—(stunted bines with curled, yellow-mottled leaves)—of the mosaic disease.

Now in the Hop a considerable number of new varieties (and one commercial variety, "Fuggles") have shown in trials carried out for several years at the East Malling Fruit and Hop Research Station, complete immunity from "mosaic disease." With the knowledge that certain plants may act as "carriers," there comes this most disturbing thought; are all varieties of Hops which now show resistance to mosaic disease, carriers of that disease? Until this question is answered the plant breeder is likely to have recurring periods of suspense, and must not be surprised if his new varieties are viewed with some suspicion.

Experimentation is the only method by which this question, as well as many other important ones, can be answered.

In the study of the spread of virus diseases two methods are available. A drop of the sap of the diseased plant can be injected into a healthy plant, or the drop, placed on a wounded surface, is allowed to be absorbed. Then if the plant thus treated shows the disease (while control plants, similarly treated with water only, remain healthy), it is concluded that the sap contains an organism which is the cause of the disease. Using the above method we carried out a few experiments on the Hop during 1924; these, however, have all so far given negative results. The second method is to employ grafting, and ascertain whether the infective principle of a supposed virus disease can be communicated from the affected stock to a healthy scion, and *vice versa*. In the case of several virus diseases, grafting is the only artificial means of transmission known at present.

For experimentation with virus diseases, as well as for many other purposes, it was necessary to ascertain whether the Hop could be grafted. So far as we are aware, this operation has not previously been described. It was found in practice to be an easy matter, and the methods adopted are described below.

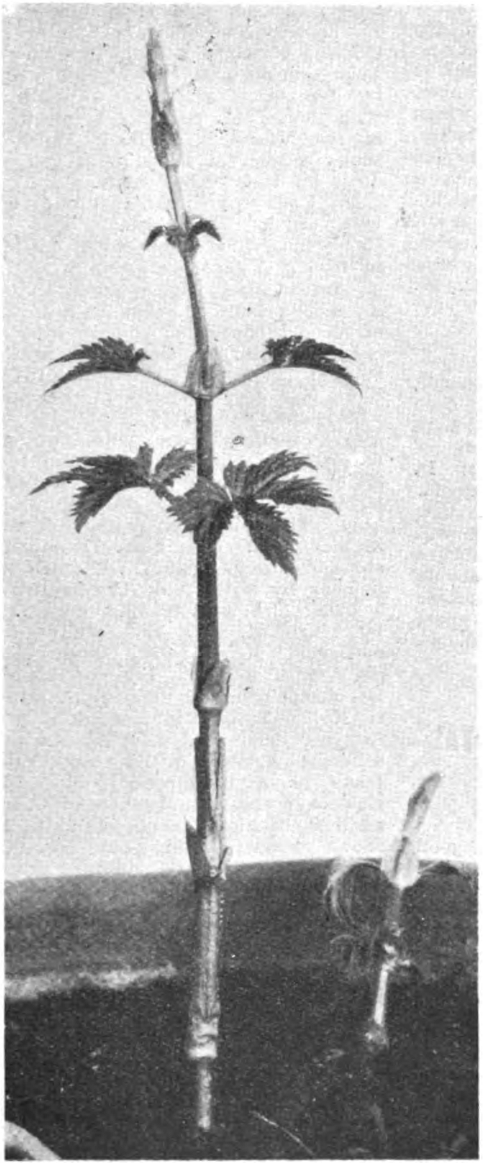

FIG. 137.—HOP PLANT WITH THE STEM CLEFT-GRAFTED BETWEEN THE SECOND AND THIRD NODES (Natural size).

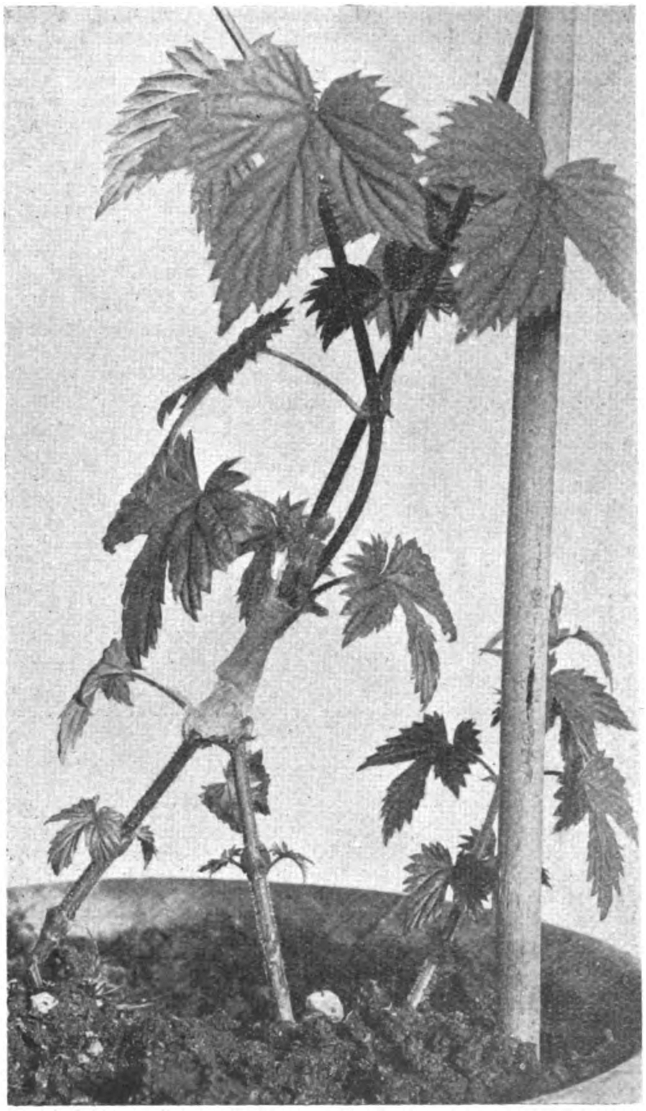

FIG. 138.—TWO STEMS OF HOP, INARCHED AND BOUND WITH RAFFIA COVERED WITH WAX. (Three-fourths natural size).

It has been found that the most suitable shoots are those having an internode of about one-eighth inch diameter at one inch or so above soil level. Two or three pairs of leaves are expanded and the terminal bud is at a height of about four inches from the ground. The internode of suitable thickness is cut across with a sharp knife, one-half-of-an-inch to three-quarters-of-an-inch above the node, and, for subsequent convenience in binding, at a height of one to two inches from the soil (Fig 137). Where it has been found necessary owing to considerations of height or thickness to cut off the stock closer to a node, no failure has resulted.

With a razor, two downward cuts from opposite points on the periphery of the cut surface of the stem are made to converge in the centre of the pith at a depth of about half-an-inch, in such a way that a wedge-shaped piece of stem is removed. Any leaves below the cut are removed to prevent interference with the binding.

The graft selected is the top of a similar shoot on another plant. If the tip of an elongated bine be chosen, it will be found that the cut end of the scion will tend to split aud curl,—though even under these conditions no failure has resulted.

Immediately the V-shaped cut has been made in the stock, the selected tip* is removed from the plant with a sharp knife at a part of the internode at least half-an-inch below the node above. It is then held with its base lying flat on a clean board and the end is made wedge-shaped by means of two cuts half-an-inch long. Although prompt insertion of the graft is desirable, in one case in our experience, a graft only two-and-a-half inches long was carried a quarter-of-a-mile on a warm day, and then "tapered" and inserted quite successfully on the selected stock.

With regard to binding material, raffia covered subsequently with paraffin wax (M.P. 45°C.) or with grafting wax or with a layer of damp cotton wool enclosed with tin-foil, has been used successfully. The method of binding employed and described by Mr. E. G. Hunt, of Fremington, North Devon, in the process of budding various fruit trees, was also tried and found to be extremely simple and the best. With fruit trees, thin surgical rubber is used without further covering. A modification of this method, viz., the use of very thin rubber, such as is found in widths of half-an-inch to three-quarters-of-an-inch in the inner winding of certain golf balls, has proved ideal for the purpose of grafting Hops. Six inches of this are cut off and one turn is made in the winding, around the stock below the cut. The graft is then inserted and winding continued upwards to three-quarters-of-an-inch above the stock, the rubber being slightly stretched as it is wound. The winding is then continued downwards again until the starting point is reached, when the free end is simply secured by tucking it under the last coil.

In this way the scion is held securely; no wilting results if, when the operation is just completed, the grafted shoot be covered with a plugged lamp-glass or a bell-jar and sheltered from the sun for a period of a week or ten days. The rubber is then unwound, but the plant is kept covered, after removal of the binding, for a further week, if necessary, in order to reduce transpiration.

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* The grafts used have varied in size; a stage found completely satisfactory is that in which one or perhaps two pairs of leaves have just expanded. The terminal bud is not removed. Such grafts are three or four inches long.

Whip-grafting and the well-known process of inarching (Fig. 138) have both been experimented with and found successful.

Pot plants in an unheated greenhouse have been used. The grafting was done at the end of March and during April. It was found that union of graft and stock takes place quickly, the former beginning to elongate after about a fortnight (when the terminal bud is not removed) and growing about ten inches in thirty days after grafting. In one case, where one variety of Hop (Eastwell Golding) was grafted on another variety (M45), fresh growth of five-and-a-half inches had been produced by the seventeenth day after grafting.

Now that the grafting of the Hop has proved possible, this method is available for the investigation of several other problems besides that of virus diseases. The effect of grafting varieties immune from "mould" on to susceptible stocks, and the converse, can be observed. Again, when in the work of hybridising Hops, it is desired to use parent plants which flower normally at unsuitable times, grafting may be of use to effect the acceleration or retardation of the time of flowering. In cross-breeding it has been found that in some "crosses," dwarfed and permanently sterile plants are produced; such plants when grafted may throw some light on the genetic aspect of the question. Again, the grafting of distinct species of Hop (such as Humulus Lupulus and H. americanus) and of varieties, will prove of scientific, if not of practical, value. For instance the variety H. Lupulus var. cordifolius, obtained ten years ago from Japan, and since grown at Wye, has, in spite of all coaxing, refused to flower; it may now possibly be induced to do so by grafting. *E. S. Salmon and W. M. Ware, Research Department, South-Eastern Agricultural College, Wye, Kent.*

VEGETABLE GARDEN.

POPULAR MAIN CROP POTATOS IN SCOTLAND.

Inquiry was recently made in various districts of Scotland regarding the late main-crop Potatos, which are proving most popular for this season's planting, and the results, which were published by the *Glasgow Herald*, show that there has been no decided change in the prevailing practice.

In the south-west the most popular varieties are Great Scot, Majestic, Kerr's Pink, Arran Chief, and King Edward. Berwickshire farmers have planted in the order of popularity: Kerr's Pink, King Edward, Field-Marshal, Tinwald Perfection, Majestic, Great Scot, Arran Chief, and Arran Comrade.

Although it is only a moderate cropper, Golden Wonder is highly esteemed on account of its high quality. Kerr's Pink is gaining in popularity while Arran Chief is losing ground in the Lothians, where the favourite varieties are: Great Scot, Kerr's Pink, Arran Chief, Field-Marshal, King Edward, and Golden Wonder. Kerr's Pink heads the Fifeshire list, with Arran Chief next; then follows Majestic, Great Scot, and Golden Wonder. The last variety suffered from the wet season, and it is not quite so popular as it was. Majestic is described as "an Englishman's Potato," and is not in great demand for ware. Some Fife growers, however, have made a lot of money with Majestic, Mr. John Stewart, of Struthers who sold all his Majestic seed at £13 per ton, being quoted as an illustration.

Great Scot is mostly grown for the English trade. In the Forfar, Montrose, and Strathmore districts a good many growers have dropped the cultivation of King Edward, but farmers with free, well-drained soils still give a moderate space to Golden Wonder. Kerr's Pink and Great Scot have been planted more extensively.

The deduction to be made from the above reports is that Kerr's Pink has displaced Arran Chief as the most popular main-crop Potato in Scotland, a position which Mr. McKelvie's oldest variety has held unchallenged for many years. Y.

HOME CORRESPONDENCE.

Wild Clematises.—In the interesting article on "Wild Clematises" in your issue of the 11th inst, I find Mr. Osborne makes no mention of C. Jouiniana or C. grata, which I find a very useful autumn-flowering climber. It is here represented by a plant which has taken possession of a Beech hedge, eight feet high, of which it covers twelve feet on both sides. In late autumn it is a mass of white flowers which have a delightful fragrance. As the flowers on the south side are passing over, those on the north side continue the display, which lasts altogether from eight to ten weeks. *G. N. Smith, Daisy Hill Nursery, Newry, Co. Down.*

Daphne Mezereum Hybrid (see p. 241).—In fairness to the late Mr. E. S. Marshall, it should be stated that he (in *Journ. Bot.*, 1910, p. 79) wrote that he quite agreed with Dr. Druce's opinion that one gathering of the supposed Somerset D. Mezereum × D. Laureola should be labelled pure D. Laureola. On the other hand, he maintained that another example from the same county was the hybrid, as well as the Sussex specimens gathered in 1902. The latter have probably not been seen by Dr. Druce. They combine the characteristics of both species and appear quite good examples of this rare hybrid. *C. E. Salmon, Pilgrims' Way, Reigate.*

FLORAL PICTURES AT THE ROYAL ACADEMY.

This year's Academy contains many good flower paintings and a few garden pictures. Commencing at number 11 is a lovely study of pink Roses in all shades, grouped in a silver jardiniére, and No. 15 is a vivid painting of red, orange, and white Begonias in a cut glass bowl—very rich. No. 20 is a group of mixed spring flowers, with Tulips, Solomon's Seal, etc. In number 34 we find Phlox and Marigolds grouped in a silver mug, with lace in the foreground. A beautiful study is No. 55, of early autumn flowers, placed in grey pottery, and, in a sketch nearby there is a crowded bunch of summer flowers in a white and blue jug. No. 67, a glass vase filled with Paeonies and blue Delphiniums, is pretty, and in number 77 the artist has painted a weird group of red Poppies and Marigolds in a white basin, on a folded tablecloth. Melton Fisher, R.A., in No. 73, portrays two whole plants of Azaleas—a delightful study, and in the large room there is a beautifully painted picture of Anemones, grouped with Pyrus and Prunus, in a very blue vase, on a plinth, standing on a mahogany table.

In the same room, a painting shows a glimpse of the dinner table, with dessert, and ornamented with a vase of Tulips. No. 171 is a small but striking picture of Anemones and Stocks, in a green and brown pottery vase. No. 158 is a study in all white and dark brown—an epergne of white Camellias, with white figures, gloves, and pearls as adjuncts, and two brown cloisonnée vases. Next to it is an indistinct study of spring flowers. There is also a sketch of woods with Bluebells, and an impressionist study of summer flowers, in a blue vase, also one of Marigolds and Cinerarias in a stone vase—close together. A large picture, No. 183, is a cool study of a girl, reflected in a mirror, holding an old-fashioned jug filled with Tulips, and on the table in the foreground is a china epergne filled with green Apples. Anna Ainy submits a most striking study of a brown negro, in a very sunny garden, and under each arm he holds a pot of Azaleas, one mauve and the other pink.

No. 222 is a glittering study of Paeonies in a shining silver bowl, and the same artist has painted a further picture, that of small Chrysanthemums in a brilliant cup, with red chessmen and an elephant as additions. No. 288 is a lovely garden by Farquharson, of arches of white Roses and Crimson Rambler Roses, with stone vase, pink Pelargoniums, and lovely green lawn. No. 568 by the same artist is a soothing garden with arches of red Roses, green lawn, and mauve Violas in a bed. There is also a sunny garden in Italy, with girl in national dress on the terrace steps.

No. 321 portrays a group of pottery, with pink Hydrangeas, and No. 418 Roses in a blue bowl, with cutting scissors in front. A Japanese group, with Marigolds in an amber glass vase is labelled No. 439, and a realistic outdoor scene is a warm painting of an old church, or college, with Ampelopsis changing into all shades of red with the stonework peeping through. In the same room is a lovely study of Begonias, double white and yellow, in black lustre pottery; also a market scene, with two picturesque old women selling their vegetable wares. A delicate study of Murillo Tulips, and a strong work in No. 497, showing an old blue and white jug, with red and orange Zinnias, and two blue Delphiniums, on a stone coloured ground. A small glass vase is near by with pink Chrysanthemums, and a black and gold plàque behind. No. 538, by Hayward, is a fine study of a green and gold Melon, with leaves, on a blue plate, with a golden Fig, red Apple, and two Bananas to complete the study. A strange picture is No. 562, in the new art, three figures carrying deep baskets of Spanish Irises of different colours with a field of growing Irises as a background. No. 566 is an Eastern scene, with baskets of Oranges, while another market scene, English this time, shows women selling our familiar flowers, Liliums Harrissii and rubrum, yellow Daisies, and buff Chrysanthemums in a pail in the foreground. In 604 there are masses of yellow and mauve Wallflowers in a white and blue ginger jar, with candlestick and shade. No. 611 shows the corner of a dinner table, with a beautiful group of white Roses in a silver vase.

In the water colour room, in No. 641, we see Marigolds in a dark blue glass bowl, and in No. 644, a pleasing painting of Cinerarias in a basin on a dark table, with good effect from a reflection. No. 650 is a tumbled mass of Ranunculus of all colours, in a dark blue vase, and near by a bunch of summer flowers in pottery. No. 659 is an effective study of Wallflowers in a ginger jar, placed on an old leather book, by Winifred Walker, and in No. 699 we see Anemones in a ginger jar again, with reflections on the table. There is a little barrel jug holding Phloxes, placed against a window frame, and another study of one or two blush Roses in a little blue jug. A powerful picture is No. 680, the subject being Hydrangeas, with realistic glass bowl in the foreground. A washy but pleasing study is 686, just heads of Phlox. Other works are, a warm study of mixed Polyanthus in a green bowl, two pictures of Roses in vivid pinks and yellows, one in a black and the other in a blue bowl, very natural. Nos. 758 and 730 are two garden studies, the former in the direct style, with Lavender and Poppies, the other, a delicate study of a garden bed, with Campanulas, Delphiniums, and Violas.

SOCIETIES.

MIDLAND DAFFODIL.

ADDITIONAL interest was given to this Society's show, held at the Botanical Gardens, Edgbaston, on April 22 and 23, for it was founded by the late Mr. Robert Sydenham a quarter of a century ago, and by the fact that a deputation from the Royal Horticultural Society came from London and made nine medal awards to noteworthy exhibits. New seedlings are extensively and well shown at Birmingham, and the present occasion proved to be no exception to the rule, although we have seen more general exhibits and exhibitors at some previous shows.

The trend of present day raisers appear to be in the development of white Trumpet and red cupped flowers, which are being shown in increasing numbers. Another interesting feature was the presentation of the Society's Gold Medal to Mr. Herbert Smith, who has been honorary secretary since the inception of the Society twenty-five years ago. Mr. Smith is well known to Daffodil growers, and his courteous and kind consideration to exhibitors and visitors has helped largely to place the Society in the position it occupies to-day.

It is not an easy matter to single out the best flowers, but the following varieties among others, found many admirers, viz., Lily of Rotherside, Beauty of Radnor, Mystic, Royalist, Wheel of Fortune, Silver Salver, Resplendent, and Beersheba. The Floral Committee awarded one First-Class Certificate and eight Awards of Merit to new varieties which are described below.

At the annual general meeting held on the afternoon of the first day of the show under the chairmanship of the President, the Rev. Joseph Jacob, M.A., the Hon. Treasurer, Mr. G. P. Cope, reviewed the Society's financial position and asked all members to do their best to increase the membership list. All the officers and committees were re-elected, and the name of Mrs. A. Butler, of Tewkesbury, a great Daffodil enthusiast, was added to the list of Vice-Presidents. On the evening of April 22, the usual dinner was held at the Grand Hotel, Birmingham, after which a general discussion took place on Daffodil matters.

AWARDS.

FIRST-CLASS CERTIFICATE.

Narcissus Beersheba.—This lovely white Daffodil was exhibited by Mr. GUY L. WILSON; it was described in our issue of April 18, p. 274.

AWARDS OF MERIT.

N. The Sapper.—A white Barrii variety with a broad, thick perianth and rich orange-red corona.

N. Poeticus Discoed.—A flower of good form, large size, substance, and purity of colour.

N. Beauty of Radnor.—A pleasing white Incomparabilis variety with a pinkish-orange frilled corona. The three foregoing varieties were shown by Dr. N. Y. LOWER, Presteign.

N. triandrus Seedlings.—The result of crossing N. triandrus albus and N. juncifolius. Four pots were shown, each containing three bulbs carrying charming flowers, four inches to six inches high, of various shades of yellow. Exhibited by Mr. J. S. ARKWRIGHT, Presteign.

N. Mitylene.—A giant crowned Leedsii, with a pure white perianth and Primrose-yellow crown. Shown by Mr. J. L. RICHARDSON and Mr. GUY L. WILSON.

N. Dactyl.—The flowers measure three-and-a-half inches or more across; they are pure white, of perfect form, with a citron-yellow eye and a striking deep red rim.

N. Silver Salver.—A small-crowned, pure white Leedsii variety of exquisite beauty.

N. Mystic (Fig. 139).—A perfectly flat, small-crowned Leedsii variety; it is clear white, with a large cup suffused with green. The narrow frilled rim is pale pink suffused with Apricot. A flower of this variety was also awarded the First Prize in the class for single blooms. The three foregoing varieties were shown by Mr. J. L. RICHARDSON.

OPEN CLASSES.

There were five splendid entries in the principal class for a collection of thirty-six varieties, representing so far as possible the different divisions. The schedule required one vase containing three stems of each variety. The five exhibits made a grand show, occupying a table space of fifty-five feet by three feet. The first prize was won by Mr. F. H. CHAPMAN, Rye, with one of the best big collections he has staged at Birmingham. The flowers were of superb quality, beautifully fresh, and set up to the best advantage. Among the outstanding varieties we noticed Rosary, Formidable, Robin Adair, Coreggio, Halfa, B. 25/16, Taranto, Gallipoli, Samaria, Hymettus, Firetail, Mitylene, Frilled Robin, Robin Redbreast (extra good), Alabaster, Harpagon, John Bushby, La Tosca, Croesus, White Sentinel, and Firetail.

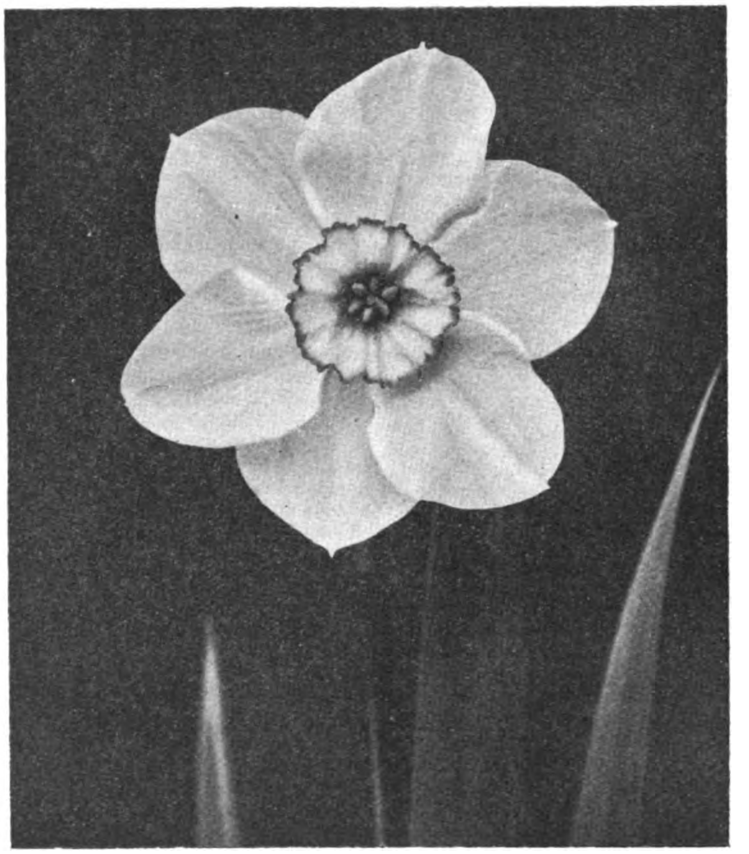

FIG. 139.—NARCISSUS MYSTIC.

Award of Merit, Midland Daffodil Society, April 22.

Mr. J. L. RICHARDSON, Waterford, was a very close second. His best flowers were Leontes, White Sentinel, Pedestal, Rosary, Mrs. W. Christie-Miller, Tenedos, Silver Salver, Ringdove, White Dame, Gallipoli, Helen O'Hara, Buttercup, H.T. 151, I.T. 129, and 40 T.140.

THE DONARD NURSERY Co., Newcastle, Co. Down, were placed third, and the Rev. T. BUNCOMBE, Black Torrington, fourth.

In the class for twelve varieties, three stems of each of yellow, white, and bicolor Trumpets, Mr. GUY L. WILSON, Broughshane, Co. Antrim, led with grand flowers of White Wax, His Excellency, Moira O'Neill, 10/17, Darius, White Emperor, Bulwark, Nevis, Honey Boy, Carmel, King William, and Beersheba; second, THE DONARD NURSERY Co., whose best flowers were 23/23, 6/63, Gorgeous, Jersey Cream, Lady Primrose, White Emperor, Cleopatra, and Mrs. Krelage.

Mr. F. H. CHAPMAN excelled in the class for six varieties of yellow Trumpet flowers with large, shapely blooms of Golden Flag, Formidable, 2 H. 48, Henry Burra, Buxted, and Bravo; second, Mr. GUY L. WILSON, who staged excellent specimens of King William, Bulwark, Florists' Delight, 8/66, W/51, and W/5; third, THE DONARD NURSERY Co.

The best half-dozen vases of white Trumpet flowers were shown by Mr. GUY L. WILSON, who had exceptionally good examples of White Knight, Milo, White Dame, Beersheba, 8/30, and B. 1 1923; second, Mr. F. H. CHAPMAN.

In the class for six bicolor varieties, THE DONARD NURSERY Co. won first prize with handsome flowers of Vestal Virgin, G. 45, Jersey Cream, Herod, Selina, and Malone Seedling; second, the Rev. T. BUNCOMBE.

For six varieties of yellow Incomparabilis Daffodils, the same order was repeated. The flowers shown by the first-named were of exceptional merit, viz., Dingo, Donax, Market Glory, Leontes, C. 72, and Croesus. Mr. BUNCOMBE's best flowers were Beau Brummel and Giraffe. In the corresponding class for six varieties of white Incomparabilis flowers, THE DONARD NURSERY Co. again led with exquisite flowers of Lady Mary Boscawen, Festive, Macebearer, Lady Moore, Whitewell, and Bernardino.

THE DONARD NURSERY Co. again beat the Rev. T. BUNCOMBE in the next class which was for six yellow Barrii varieties. The winning firm's best flowers were Joan of Arc, Jasper, Siskin, and Barrii 162.

In a class for six white Barrii varieties,

The Donard Nursery Co. was again to the fore with beautifully fresh, strong-stemmed flowers of Cossack, Harpagon, Ace of Hearts, Dosoris, Firetail, and White Star; second, Mr. J. L. **Richardson**, who included good flowers of Firetail, Magician, and Dosoris; third, Rev. T. **Buncombe**.

The best of five entries in the class for six giant or large-crowned Leedsii varieties came from Mr. **Guy L. Wilson**, whose set included magnificent specimens of Tenedos, White Nile, and Hymettus. Mr. F. H. **Chapman** and **The Donard Nursery Co.** were placed second and third respectively.

The Rev. T. **Buncombe** was the only exhibitor in the class for small-crowned Leedsii varieties, and he well deserved the first prize awarded; his blooms of Ivorine, White Slave, Hypatia, St. Olaf, Candidata, and White Frank were surprisingly good.

In the class reserved for Triandrus hybrids. Mr. W. B. **Cranfield**, Enfield, excelled easily. He showed choice blooms of Waterfall, Havelet, 630, Silver Cloud, Venetia, and White Coral. The winning exhibit of six Poeticus varieties came from Dr. N. Y. **Lower**, Presteign, whose flowers of Discoed, Ringdove, 15 W. 2, 858, Raeburn, and 859 were very choice; second, **The Donard Nursery Co.**, whose best flowers were Thetis and Clandon.

SINGLE BLOOM CLASSES.

Competition was good in most of the single bloom classes for which the awards were as follow:—*White Trumpet:* First, Mr. **Guy L. Wilson** with Kantara, a large, shapely flower; second Mr. J. L. **Richardson** with 131. *Bicolor Trumpet:* First, Mr J. L. **Richardson** with Tapin. second, Mr. **Guy L. Wilson** with Halfy. *Yellow Incomparabilis:* First, **The Donard Nursery Co.** with S. 290, a deep yellow flower of good form and substance; second, Mr. J. L **Richardson** with B.H. 1. *White Incomparabilis:* First, Dr. N. Y. **Lower** with Beauty of Radnor; second, Mr. J. L. **Richardson** with 11.T. 137. *Yellow Barrii:* First, Mr. F. H. Chapman with Dinkie, a dainty flower with thick, flat petals suffused with lemon; second, **The Donard Nursery Co.** with Siskin. *White Barrii:* First, Mr. F. H. **Chapman** with Resplendent, a perfect flower of great purity; second, Dr. N. Y. **Lower** with The Sapper. *Giant-crowned Leedsii:* First, Mr. W. B. **Cranfield** with Tenedos; second, **The Donard Nursery Co.** with Silver Plane. *Small-crowned Leedsii:* First, Mr. J. L. **Richardson** with Mystic, a charming flower. *Triandrus hybrid:* First, Mr. W. B. **Cranfield** with Venetia; second, Mr. E. H. G. **Thurston**, Chandlersford, with 19 T. *Cyclamineus hybrid:* First, Dr. N. Y. **Lower** with Orange Glory. *Jonquilla hybrid:* First, Mr. W. B. **Cranfield** with Solleret; second, **The Donard Nursery Co.** with Buttercup. *Tazetta or Tazetta hybrid:* First, Mr. F. H. **Chapman** with 1 I. 10; second, Mr. **Harold Lee**, Wolverhampton, with Glorious. *True Poeticus:* First, Dr. N. Y. **Lower** with Discoed; second, Mr. J. L. **Richardson** with Dactyl. *Double:* First, Mr. J. L. **Richardson** with Mary Copeland; second, **The Donard Nursery Co.** with Primrose Phœnix.

SEEDLING CLASSES.

The Bourne Challenge Cup offered for twelve varieties, one stem of each, raised by the exhibitor, was again won by Dr. N. Y. **Lower**, who had a wonderfully fine collection comprising Discoed, Royalist, Mrs. Lower, Beauty of Radnor, and unnamed seedlings; second, Mr. F. H. **Chapman** with delightfully fresh. bright specimens of John Bushby, Organdie, Dinkie, Lady Rotherside (extra good), Spellbound, Pavane, Cavatina, Resplendent, and unnamed seedlings. The best half-a-dozen varieties not in commerce, raised by the exhibitor, were shown by Mr **Guy L. Wilson**, who showed Buff Barrii and five unnamed varieties; second, Mr. A. **Robinson** Bawtry. In a similar but smaller class for three varieties, Miss R. **Pope**, Kings Norton, beat four contestants with choice, unnamed flowers of great promise. In a class reserved for three varieties not in commerce, raised by an exhibitor who has never won a first prize for seedlings (single bloom classes excepted), Mr. G. B. **Cope** beat Mr. A. H. **Bassano**, Old Hill, and Mr. J. E. **Exley**, Leeds, who were placed second and third respectively.

The Cartwright Challenge Cup, offered for twelve varieties, one stem of each, which have not been in commerce more than four years, was won by Dr. N. Y. **Lower** with handsome specimens of Kingcraft, Bacchus, Royalist, Carmenta, Gold Mohur, Glorious, Maharajah, John Peel, Tenedos, Robin Redbreast, Nissa, and Gaza.

In a similar but smaller class for six varieties. Mr. J. L. **Richardson** was the only exhibitor; he showed superb blooms of Beersheba, Mitylene, Tenedos, Silver Salver, and Mystic.

The Walter Ware Challenge Cup, offered for six Triandrus seedlings, one stem of each, attracted three contestants. Mr. W. B. **Cranfield** excelled with refined flowers of Wavelet, White Coral, Waterfall, 630, Venetia, and Harvest Moon. Mr. E. H. G. **Thurston** was a good second, and Dr. N. Y. **Lower** came third.'

The "White Daffodil" Trophy, offered for six varieties of white Trumpet flowers, was won outright last year by Mr. **Guy L. Wilson**, who very generously returned it to the Society, and it was again secured by the same exhibitor, who showed splendid flowers of White Dame, White Wax, Kantara, Beersheba, Nevis, and 11/7; second, **The Donard Nursery Co.**

The Leamington Challenge Cup, one of the Society's latest acquisitions, was this year offered for six varieties with red cups, one stem of each. This brought Dr. **Lower** and **The Donard Nursery Co.** into competition and the Trophy was awarded to the first-named exhibitor. His collection included Torrid, Meerkara and four unnamed varieties.

The Arkwright Challenge Cup, another valuable addition to the Society's prizes, was offered for six varieties of bicolor Trumpet Daffodils, and there were six first-rate entries. First Mr. J. L. **Richardson**, with Herod and five unnamed seedlings; second, Mr. F. H. **Chapman**, with Taranto, Otranto, Rosary, Gallot and two unnamed seedlings.

AMATEURS' CLASSES.

Competition in the Amateurs' Division was disappointing, although Mr. J. S. **Arkwright**, of Presteign, who was the only exhibitor and first prize winner in the principal class for twenty-four varieties, three stems of each, had a remarkably fine and representative exhibit. Included in this display were beautifully clean, well arranged flowers of Countess of Southesk, Bonfire, Buttercup, Xenophon, Giraffe, Robin Redbreast, Donax, Lord Roberts, Irish Pearl, Loch Fyne and candidata. In a class for six white or yellow Incomparabilis varieties, Miss V. **Warren**, Canterbury, won the first prize and she was the only exhibitor in the class for three Poeticus varieties in which she was awarded the first prize.

Messrs. **Cartwright and Goodwin** offered a Silver Vase for six varieties of Daffodils and it was won by Mr. H. J. **Morris**, Penryn, with Horace (very fine), 84, Red Beacon, Silver Chimes, Red Chief and Whitewell; second, Mr. G. B. **Cope**. Mr. H. J. **Morris** was also awarded first prize for three Poeticus varieties with capital flowers of Black Prince, Horace and Queen Maeve. There were six bowls of Daffodils placed before the judges who awarded first prize to Mr. J. S. **Arkwright**.

MEDAL AWARDS.

The following awards were made by the Royal Horticultural Society's deputation:—

Gold Medals to Dr. N. Y. **Lower** for twelve seedling Daffodils raised by the exhibitor; to the same exhibitor for a collection of Daffodils, and to **The Donard Nursery Co.** for Daffodils.

Silver-Gilt Flora Medal to Messrs. **Barr and Sons** for Daffodils.

Silver-Gilt Banksian Medals to Mr. F. H. **Chapman** for twelve seedling Daffodils raised by the exhibitor, and to the same exhibitor for a collection of Daffodils.

Silver Banksian Medals to Mr. J. L. **Richardson** for Daffodils, and Mr. J. S. **Arkwright** for Daffodils.

Bronze Lindley Medal to Miss R. **Pope** for old-fashioned Daffodils.

Medals offered by the Birmingham Botanical and Horticultural Society were awarded as follow: Classes 1 to 29, Silver Medal to **The Donard Nursery Co.**, with 97 points; Bronze Medal to the Rev. T. **Buncombe**, with 54 points.

Classes 15 to 29 and 30 to 40: Silver Medal to Dr. N. Y. **Lower**, with 77 points; Bronze Medal to Mr. J. L. **Richardson**, with 50 points.

Classes 15 to 29 and 41 to 48: Silver Medal to Mr. J. L. **Richardson**, with 30 points; Bronze Medal to Dr. N. Y. **Lower**, with 29 points.

The Gardeners' Chronicle Medal offered for the best exhibit in the amateur classes was awarded to Mr. J. S. **Arkwright**, Presteign.

HONORARY EXHIBITS.

Mr. **Guy L. Wilson** sent a choice collection of Daffodils, in which we noted many good things, including Beersheba, Firetail, Moira O'Neill, Nissa, Tenedos, Chloris, Yukon, and many varieties under number. (Silver-Gilt Medal).

The Donard Nursery Co. contributed the biggest group of Daffodils. The undermentioned varieties were of outstanding merit: Oracle, Donax, Mrs. Krelage, Croesus, Gog, Festive, Silver Fox, Irish Pearl, Farthingale, Harpagon, Quest, Warspite, and White Lady. (Gold Medal).

Dr. N. Y. **Lower** sent an interesting collection of Daffodils, mostly of his own raising. (Gold Medal).

Messrs. **Barr and Sons** occupied the orchestra at the west end of the hall with a representative collection of Daffodils, for which a Gold Medal was awarded.

Messrs. J. R. **Pearson and Sons** were represented by a collection of Daffodils, which included a large number of first-class varieties. (Silver-Gilt Medal).

Messrs. **Cartwright and Goodwin** had a large bank of Daffodils, mostly of well-known varieties. (Silver-Gilt Medal).

Messrs. **Hewitt and Co.** had a decorative arrangement of Daffodils, Spanish Irises, Tulips, and Freesias, relieved with Asparagus, Nephrolepis, and Grevilleas. (Silver-Gilt Medal).

Mr. J. **Mallender** sent a collection of Daffodils, in which many varieties were of his own raising. (Silver Medal).

Messrs. **Bakers** showed flowering shrubs and herbaceous plants. (Silver Medal).

Messrs. **Sheppards** sent Polyanthuses, Saxifragas, Aubrietias, and dwarf Conifers. (Bronze Medal).

To commemorate the Society's twenty-fifth show, Miss R. **Pope** collected and staged an interesting collection of seventy-one varieties of Daffodils in cultivation twenty-five years ago, with a view to showing the improvements that have taken place during this period. In addition to the Bronze Lindley Medal given by the Royal Horticultural Society's deputation, the Midland Daffodil Society added a special vote of thanks to Miss Pope for her help and support in getting together an exhibit of such educational value.

ROYAL HORTICULTURAL.

May 5 and 6.—According to the R.H.S. *Book of Arrangements*, Rhododendrons were the special feature of this fortnightly meeting of the Royal Horticultural Society at Vincent Square, but although these handsome shrubs were freely shown they did not dominate the other flowers. While most of the Rhododendron enthusiasts grow lovely flowers, they still have a great deal to learn in showing them to even moderate advantage. So far as the excellence of the individual trusses of bloom is concerned seldom, if ever, have those staged by T. H. Lowinsky, Esq., been equalled, for they were magnificent. The chief exhibits before the Floral Committee were hardy flowering shrubs, Roses and alpines. Orchids were very few in number and the Fruit and Vegetable Committee had an empty session.

Orchid Committee.

Present: Sir Jeremiah Colman (in the chair), Mr. Gurney Wilson, Hon. Sec., Sir George Holford, Sir Frederick Moore, and Messrs. H. T. Pitt, H. G. Alexander, J. E. Shill, Fred. K. Sander, Henry H. Smith, J. C. Cowan, T. Armstrong, E. R. Ashton, J. Wilson Potter, C. Cookson, Arthur Dye, R. Brooman White, Stuart Low and Charles H. Curtis,

First-Class Certificate.

Odontoglossum White Admiral.—A lovely Odontoglossum of unknown parentage but it would seem to have derived from O. Pescatorei. The petals are pure white and the sepals white, or lightly flushed with soft rose. The lip is white with a large yellow crest and a blotch of rich red-brown just beneath it. In form and substance this Orchid is very like a beautiful O. crispum. Shown by Sir George Holford (gr. Mr. H. Alexander), Westonbirt, Tetbury, Gloucestershire.

Awards of Merit.

Odontoglossum Eldorda (O. eximium × O. Lakenae).—A handsome hybrid with large rounded flowers of excellent form and substance. The ground colour is white, flushed with pale rose and on this there are markings of chocolate-red, these being heavier on the sepals than the petals. The lip is white, with one large and several small blotches of colour. Shown by Messrs. Stuart Low and Co.

Odontoglossum Fabia var. Sir Christopher Wren (O. Aglaon × O. eximium).—A showy hybrid with bright crimson sepals and petals, the latter having small white marginal fimbriations. The lip is rounded, bright red-brown with yellow crest and whitish margin. Shown by J. J. Bolton, Esq. (gr. Mr. Lyne), Claygate Lodge, Claygate, Surrey

Sophro-Laelio-Cattleya St. Gothard (Sophronitis grandiflora × Laelio-Cattleya St. Gothard).—The large flower of this hybrid is very effective. The colour is rich and brilliant crimson all through, the shade being a trifle brighter in the lip than in the sepals and petals. Shown by J. J. Bolton, Esq., Claygate.

Miltonia Princess Mary (M. Hyeana × M. Bleuana var. Reine Elizabeth).—A pretty hybrid with large, showy flowers. The big lip is white, flushed with rose; the sepals are similarly coloured but the rose shading and markings are deeper. The two petals are intense rose-red at the base shading to purplish-mauve with white at the tips. The mark on the lip is bright red-brown and the crest is yellow. Shown by R. Paterson, Esq., Stamperland House, Cathcart, Glasgow.

Other Exhibits.

The Orchid Committee had very little to do. There were no groups, but no doubt many exhibitors were "saving up" for Chelsea.

W. Van de Weyer, Esq., Clyffe House, Dorchester, sent a fine specimen of the old Ansellia africana with eight spikes; the flowers are heavily spotted with chocolate-brown on a yellow ground; we have seen better varieties. The same exhibitor showed two plants of Eulophia streptopetala, each carrying two spikes of yellow-petalled and yellow-lipped flowers with velvety-brown sepals. A Cultural Commendation was granted for the Eulophias.

Floral Committee.

Section A.—*Present:* Mr. H. B. May (in the chair) and Messrs. J. F. McLeod, H. J. Jones, Hugh Dickson, Donald Allan, W. B. Gingell, D. B. Crane, W. Howe, J. M. Bridgeford, M. Allwood, F. Cousins, E. R. Janes, J. B. Riding and Chas. E. Pearson.

Section B.—*Present:* Mr. Chas. T. Musgrave (in the chair), Sir W. Lawrence and Messrs. W. J. Bean, James Hudson, G. Reuthe, G. Harrow, W. B. Cranfield, E. H. Wilding, Edgar F. Stead, C. Williams, Reginald Cory, F. G. Preston, H. T. McLaren, T. Hay, Clarence Elliott, E. A. Bowles, G. Yeld, R. C. Notcutt, Gerald W. Loder and Amos Perry.

Awards of Merit.

Rhododendron Dorothea.—An exquisitely beautiful and very large-flowered variety with widely expanded blooms. There are about fifteen flowers in a truss. The colour is pale blush with a few pale brown spots on the upper segment. Shown by T. H. Lowinsky, Esq., Sunninghill.

Rhododendron campanulatum, Knap Hill var.—A charming variety, with large mauve-coloured flowers, broadly campanulate and paler in the centre than on the spreading lobes. Shown by Lionel de Rothschild, Esq., Exbury, Southampton.

Rhododendron sperabile.—This interesting plant (Farrer 888) has ovate-lanceolate leaves and showy, light scarlet flowers of medium size. The foliage is dark green above and covered with buff-white on the under-surface. Shown by Lionel de Rothschild, Esq., Exbury, Southampton.

Rhododendron William Watson.—This glowing variety—named after a great horticulturist who very greatly admired it—has wide, rich pearl-pink flowers that are brilliant, almost scarlet in the bud stage. The leaves are stiff, shiny green above and yellowish beneath. Shown by Messrs. R. Gill and Sons.

Rhododendron Teysmannii.—A glorious Rhododendron with huge, broad-mouthed, campanulate flowers, semi-drooping, and pure white save for a little pale yellow staining in the base of the tube. The green leaves are greyish beneath. The flowers are slightly fragrant. This is an old species from Sumatra, and a plant of doubtful hardiness. Shown by Messrs. R. Gill and Sons, Falmouth.

Cineraria Beauty of Cambridge.—This has white flowers tipped with blue and borne in loose heads. The leaves are green above and grey beneath. Shown from the Cambridge Botanic Gardens.

Acer Pseudoplatanus var. brilliantissimum.—When dressed in its new growth this is a handsome tree, the new foliage being bronzy-pink, tinged with pale green. Shown by the Hon. Vicary Gibbs (gr. Mr. Beckett), Aldenham House, Elstree.

Azalea Hollandia.—A rich scarlet, hardy variety with an abundance of medium-sized flowers. It is stated to be the result of a cross between Azalea Hinodegiri and A. Kaempferi. Shown by Messrs. C. B. van Nes and Sons.

Retinospora plumosa nana compressa.—A dwarfed spreading plant admirably suited to planting in the rock garden. It is greyish-green with greenish-yellow tips to the tiny growths. Shown by Messrs. C. B. Van Nes and Sons, Boskoop.

Rose Sylvia.—A beautifully formed, broad-petalled variety of full Ophelia type. The colour is a lively clear pink, with soft orange shading at the base of each petal. A very lovely Rose and pleasingly fragrant. Shown by Mr. Walter Stevens, Hoddesdon.

Anemone hortensis Blue Gown.—A beautiful double variety, with a large central cluster of petaloid stamens surrounded by broad, guard petals. The colour is rich metallic blue, several shades deeper than electric blue. Shown by Messrs. Carter Page and Co.

Groups.

Roses were particularly well shown by several exhibitors. Just inside the entrance Messrs. B. R. Cant included amongst many vases of cut flowers, Mrs. Edmund Cant, a magnificent H.T. variety, of large size and perfect exhibition shape. The colouring is pale flesh-pink, which becomes lighter on the older petals. It is a pleasantly fragrant bloom and is said to be very successful for garden decoration. Amongst the older varieties Sovereign, of rich colour, and Phoebe were very fascinating. Under the clock Mr. Elisha J. Hicks had an attractive collection of cut Roses, which included Chas. E. Shea, America, Clovelly, Mrs. Henry Stevens, and Mrs. Foley Hobbs. The new Sylvia, of lovely pink colouring, and Roselandia, which received an Award of Merit a fortnight ago, were staged by Messrs. Stuart Low and Co. in excellent condition. In a floor group the Rev. J. H. Pemberton exhibited some well-flowered Polyantha Roses, amongst which Koster's Orleans was prominent.

A splendid collection of Hydrangeas was shown by Messrs. R. and G. Cuthbert. These sturdy plants were in relatively small pots, and bore huge heads of well-coloured flowers.

Their customary exhibits of greenhouse Carnations were displayed by Mr. C. Engelmann. Messrs. Allwood Bros. and Messrs. Stuart Low and Co., who had an excellent collection of Mimosas, which diffused a most pleasant fragrance. The principal sorts were Acacia pendula and A. armata, but all were most profusely flowered.

Messrs. Stuart Low and Co. also had some dwarf plants of the yellow-flowered Calla (Richardia) Elliottiana and Hippeastrums. Exceptionally rich-flowered little Clematis plants were associated with Pyruses, Wistarias, Prunuses and Azaleas by Messrs. L. R. Russell, Ltd. Although an old variety, the dark blue Clematis President was especially effective. King of the Belgians, a more recent variety, is of lovely silvery mauve colour. Crimson King and Lasurstern were also worthy of mention. A graceful collection of shrubs was arranged by Mr R. C. Notcutt, who showed well-flowered examples of Pyrus Arnoldiana, P. Halliana, and P. spectabilis rosea plena with various Cherries and Brooms. Pyruses in variety were also shown by Messrs. J. Cheal and Sons, who also had profusely flowered Prunuses with other genera. Excellent Wistarias were included in his group by Mr. G. Reuthe with his alpines and Rhododendrons. Amongst the last-named were R. Thomsonii, R. Walter Reuthe, and R. Thomsonii roseum.

The Maytham Gardens arranged their exhibit into two very effective colour schemes. In the centre a large quantity of Dutch Iris Pieter de Hough was associated with Alyssum saxatile citrinum, and this was flanked on either side by Berberis stenophylla and blue Anchusas.

Generally the alpines were displayed in small rock gardens, and in this manner Mr. Clarence Elliott had a most delightful exhibit of Gentiana acaulis. Viola bosniaca and Aubrietia rosea splendens were prominently shown by Messrs. Waterer, Sons and Crisp, while Daphne Cneorum, various Saxifrages, Myosotis, and Daisies were the chief plants displayed by Messrs. B. Ladhams, Ltd.

A large bush of double-flowered Furze in the collection of Messrs. Skelton and Kirby attracted a deal of attention. Gentiana acaulis and Ranunculus gramineus were attractively shown by Mr. Maurice Prichard. Mr. W. Wells, junr., included the double-flowered Marsh Marigold and Onosma alba rosea.

At one end of their alpines, Messrs. A. H. Rogers and Son displayed a number of really hardy succulent plants in small pots. They also had a good pink variety of Primula pulverulenta, Leptospermum Boscawenii and L. Chapmanii. Primula Rev. Hugh, of intense colour, and P. pulverulenta were excellent in the exhibit of Messrs. Maxwell and Beale. A good strain of Lupins was included with other flowers by Messrs. Bakers, Ltd.

Pretty batches of Tulipa Clusiana, and Cyclamen repandum were prominent among the alpines shown by Messrs. Carter Page and Co., who also had a good collection of Violas. Mr. F. G. Wood again showed some admirable bushes of Daphne Cneorum, and amongst various alpines and herbaceous plants he had desirable Cowslip hybrids and the old Hose-in-Hose Oxlip. A large exhibit of excellent plants of Primula pulverulenta and the deep, flesh-pink variety Lady Thursby was made by Mr. G. H. Dalrymple. Polyanthuses and Primroses in good strains were shown by Mr. G. A. Miller, who also had deep blue Muscari, and by Messrs. J. and A. H. Crook.

All along the front of their large collection of Tulips Messrs. Barr and Sons placed many boxes of dwarf Irises of considerable beauty and great value for the spring gardens. Those of blue shades of colour included Princess Louise, Standard, Burgundy, and Samboo. Amongst those of yellow tones were Cottage Maid and Curiosity, but a great variety of other sorts was represented.

Messrs. Jarman and Co. brought a vivid collection of Zonal Pelargonium trusses. The brightest of the single-flowered sorts were General Wolsey, Sir E. Cassel, and E. Hockey. They also showed several varieties of Pelargonium with scented foliage.

RHODODENDRONS.

T. H. Lowinsky, Esq. (gr. Mr. Gilbert), Tittenhurst, Sunninghill, showed fully one-hundred-and-twenty single trusses of Rhododendron hybrids of great magnificence. These were all practically distinct, and the exceptionally large trusses were of ideal shape, and built up with large, fresh flowers of clear colouring. Unfortunately, there were no names or indication of their parentage, so a deal of the educational value of the exhibit was lost, but it displayed great cultural skill.

Col. Stephenson Clarke, C.B., Borde Hill, Cuckfield, had a varied and most interesting collection, often of goodly trusses. His hybrids, of the greatest garden value, included R. Fortunei × blood-red arboreum, in fine trusses of vivid pink colouring. R. Van Nes is a vivid crimson; R. inverianum is a deeper crimson; R. Loderi was represented by immense trusses of lovely flowers. Fortunei × Thomsonii gave a well-formed truss of large, bright, soft pink flowers. The same cross gave Sir John Ramsden, Bulstrode, Gerrards Cross, almost identical trusses, and also a deeper-coloured variety. R. Thomsonii × R. campylocarpum is a compact truss of orange-pink-stained flowers of considerable beauty. The Duchess of Portland is a beautiful, white variety, with a few spots in the centre of the bloom. R. gloriana (R. campylocarpum × R. barbatum) is a truss of wine-crimson-colouring of great charm. There were also branches of the small-flowered, blue Rhododendrons.

E. G. P. Major, Esq., Lamellan, St. Tudy, Cornwall, included many medium and small-flowered Rhododendrons of great beauty. Amongst these were R. prostratum, R. impeditum, and R. Davidianum. The large-flowered varieties include R. decorum, R. Gilian, and R. Ione (Countess of Haddington × R. bullatum), a very beautiful ivory-white variety.

Leopold de Rothschild, Esq. (gr. Mr. A. Bedford), Exbury, Hants, had a magnificent vase of R. Loderi, and also included R. campylocarpum, of rich, yellow colour. R. Thomsonii, R. Thomsonii × R. Mangles, Scarlet, of very dark, vinous crimson, and R. Aurora, a splendid, large, pink truss.

Lieut.-Col. Messel, Handcross, included trusses of R. fragrantissima, with R. Luscombei, R. Falconeri, R. campanulatum, R. arboreum, white variety, and R. arboreum No. 1, a lovely, rosy-coloured flower.

Lady Aberconway (gr. Mr. F. C. Puddle), Bodnant, Tal-y-cafn, North Wales, showed R. Thomsonii × R. kewense, a large, pink bloom; R. Penjerrick; R. Cornish Cross; R. Otto Foster, a large, pale blush variety; and R. Beauty of Tremough.

Messrs. R. Veitch and Son included such interesting sorts as R. niveum, an old but valuable species bearing shapely trusses of lovely mauve colour; R. Exminster, a delightful rosy-pink truss of large size; R. Cornish Cross, rosy cardinal; R. Retreat, a large creamy-white bloom with regular spots; and R. Margaret, an immense truss somewhat reminiscent of Pink Pearl, but much earlier and equally free. Other species which were well represented included the waxy blooms of R. Keysii, and such tiny little shrubs as R. impeditum and R. hippophaeoides. Messrs. R. Gill and Sons had a goodly collection of species and their hybrids, but these were not named. They also showed several spikes of the rich blue Myosotidium, and a good range of St. Brigid Anemones, which also were staged by Messrs. Reamsbottom and Co.

Narcissus and Tulip Committee.

Present: Mr. E. A. Bowles (in the chair), Sir Daniel Hall, and Messrs. W. B. Cranfield, P. D. Williams, Chas. H. Curtis, P. R. Barr, J. de Graaff, G. Churcher, W. Poupart, R. Meyer, G. W. Leak, W. F. M. Copeland, J. W. Jones, F. Barchard, and F. Herbert Chapman.

AWARDS OF MERIT.

Narcissus Mrs. John Robinson.—A poeticus variety of good form and substance, but no apparent improvement on many varieties already seen. It has broad, white perianth segments and a deep yellow, crimson edged cup. Shown by A. Robinson, Esq., Kingswood, Bawtry.

Narcissus Morocco.—This is a fine Barrii variety with broad, overlapping, white perianth segments, and a fairly broad, plaited cup of deep orange colouring. Shown by Mr. F. Herbert Chapman, Rye.

GROUPS.

Messrs. Barr and Sons exhibited a very large group consisting of Daffodils and Tulips, with varieties of Iris pumila planted in fibre in front of the latter. The Daffodils were exceptionally good considering the lateness of the season, and many notable varieties were included. Probably the most outstanding sort was the giant incomparabilis Prince Fushimi, which has a beautiful white perianth and a large, open, globular cup of apricot-orange colour. Others of special merit were Adelgar, a large Trumpet Daffodil with a soft yellow perianth and rich golden-yellow trumpet; Primrose Phoenix, Grecian Beauty, Croesus, Nannie Nunn, Lord Kitchener and Mrs. Robert Sydenham. The Tulips were also the best in the show and included such beautiful sorts as Couronne de Cerise, Fire King, Couleur Cardinal, Coquette de Belleville, La Rêve, Rosamundi and Artus, this very fine group being pleasingly set off by small pot plants of ornamental leaved Maples. The Dwarf Irises were in a variety of colours and most suitable for planting in rockeries.

Mr. Herbert Chapman showed some beautiful Daffodils, most of them of his own raising. Amongst the more conspicuous were Flaming Heart, Solomon, a fine Poetaz variety with solid white segments and flat, wide crown, that is coloured dark red passing to gold in the centre; Grand Marmer, Silver Salver, Samaria, the last two fine pure white Leedsii varieties; Raeburn, Gaza, a big Trumpet variety with a cream perianth and deeper cream trumpet; Kaffir, Orgy, with a red crown nearly as big as its white perianth, and the beautiful Mystic illustrated in Fig. 139.

Messrs. R. H. Bath, Ltd. showed Daffodils and Tulips, with an edging of Violas in pans. The Tulips included Wouverman, a fine claret-purple variety; Brunhilde, Prince de Ligny, Arabella, Brilliant Star, Ibis, and Yellow Prince. The Narcissi were chiefly Poetaz varieties, such as Snow King, Sonata, Kestrel, Bonfire, Larissa and Noel.

Mr. J. W. Barr, Wimborne, showed a collection of Daffodils in which the more notable varieties were Whitewell, Gwendoline, a fine giant Barrii; Bartolini, a big, yellow Trumpet variety; Pyrrha, Sweet Melody, Red Gauntlet, Saturn, a giant Barrii variety with a fine regular perianth of broad segments, a rich yellow cup and a broad, red, frilled margin; and Pygmalion, another Barrii, the crown of which is beautifully frilled.

Messrs. Dobbie and Co. showed, as a corner group, a very pretty exhibit of Narcissus Firetail arranged in a setting of moss. The exhibit represented a corner in a dell and the inclusion of a boulder and a tiny Primula gave a very pleasing touch of reality to the scene. This received a Cultural Commendation.

Fruit and Vegetable Committee.

Present: Messrs. J. Cheal (in the chair), W. Poupart, W. H. Divers, S. B. Dicks, E. Beckett, W. J. Lobjoit, W. F. Giles, H. Markham, T. Pateman, E. Neal, J. Harrison, G. F. Tinley, E. A. Laxton, A. N. Rawes, E. A. Bunyard, P. C. M. Veitch, A. Metcalfe and W. Taylor.

There was no entry of any kind for the consideration of this Committee.

NATIONAL AURICULA AND PRIMULA.

The annual exhibition of the Southern Section of the National Auricula and Primula Society was held in conjunction with the R.H.S. meeting on Tuesday last, and although competition was restricted amongst a few competitors the display on the whole was very interesting. All lovers of beautiful flowers will recognise the good work which this Society does in perpetuating the beautiful florists' varieties of both Auriculas and Primulas, and for the opportunity their shows afford of enabling the general public to see the finest types of these flowers as evolved by the old florists.

The largest class was for twelve Auriculas, dissimilar, and the only exhibitor was Mr. James Douglas, whose success in cultivating these flowers is unequalled at the present time. He showed such beautiful sorts as Clandon Green, George Lightbody, Green Parrot, Black Bess, Lord Steyne, May Day, Greyhound, Elaine and Green Lawn. A smaller, but similar class, for six Auriculas, dissimilar, brought two competitors, and the first prize carried with it the James Douglas Memorial Cup. It was won easily by Mr. G. Stanbridge, whose plants of Tottenham, The Miller, Green Lawn, Clandon Green, Bookham Blue, and Calipha were remarkably fine; second, J. T. Bennett-Poe, Esq.

For four Auriculas, dissimilar, Mr. A. S. Hampton, Reading, excelled, showing Lincoln Green and three seedlings, one a red self like Lord of Lorne; second, Mr. Heron-Allen, Selsey Bill, whose plant of Harrison Weir was very commendable. The last exhibitor excelled in the class for four fancy Auriculas, his best plant being Frank, a grey-edged fancy variety.

In the large class for twelve alpine Auriculas, Mr. JAMES DOUGLAS had the field to himself and won the first prize worthily with grand plants of The Laird, Argus, Roxburg, Admiration, Day Dream, Hector, Teviotdale and others.

Mr. J. T. BENNETT-POË was the sole competitor in the class for six alpine Auriculas, and he was awarded the first prize for Argus, J. T. Bennett-Poë, Prime Minister, Golden Dustman, Roxburgh, and Muriel. For four alpine Auriculas Mrs. GROVE, Brondesbury, beat Mr. BENNETT-POË, having larger plants with bigger trusses. Her most notable varieties, were Argus, Sunbeam, and Stephen Longton. Mr. BENNETT-POË showed a very fine plant of Roxburgh in his collection.

The best specimen alpine Auricula with a gold centre was shown by Mrs. GROVE in the variety Muriel, and this lady was also second with a seedling of the Muriel type. For a single alpine Auricula with a white centre, Mrs. GROVE again excelled, showing Phyllis Douglas, which was adjudged the premier alpine Auricula in the show, but some considered that Muriel, shown in Mr. BENNETT-POË's collection of four, was superior. This gentleman came second with Roxburgh, and Mr. A. S. Hampton third with Argus; five competed in this class. Mr. HERON-ALLEN was the only exhibitor of six alpine Auriculas. open to an exhibitor who has never won a first prize at these shows. Mrs. GROVE was first for six alpine Auriculas, dissimilar, and Mr. JAMES DOUGLAS led for twelve fancy Auriculas with grand specimens of Heliotrope, Cicero, May Day, Bookham Green, Agnes, Maize, King of Yellows, and others—a superb lot.

In the classes for Polyanthuses and Primulas, Mr. G. W. MILLER won almost all the prizes. He was first for a single specimen of a Primula, with Mauve Gem, for six double Primroses, for six Polyanthuses, and for a group of Primulas and Auriculas. Such poor competition for these popular garden flowers is to be regretted.

In connection with the Auriculas, it was interesting to see exhibited a plant of the wild yellow Primula Auricula, raised from plants collected on Monte Baldo, Lago di Garda, by Mr. Clarence Elliott; accompanying the plant was a reproduction of L'Obel's figure from Gerard's *Herbal*, which obviously represented the same plant.

NORTH OF ENGLAND HORTICULTURAL.

THE spring show of the North of England Horticultural Society was held at Harrogate on April 16 and 17. The Rev. J. Bernard Hall informs us that it was the best of the five post-war shows and that the gate money amounted to £65. The following awards were made:—

Gold Medals to Messrs. MANSELL AND HATCHER, Rawdon, Leeds, for Orchids; to Mr. ELISHA J. HICKS, Hurst, Berkshire, for Roses; to Messrs. SUTTON AND SONS, Reading, for a group of flowering plants; and to Messrs. BACKHOUSE NURSERIES (YORK), LTD., for rockwork.

Large Silver-Gilt Medals to Mr. ALVA J. HALL, Harrogate, for alpines; and Mr. H. FRANKLING, C.B.E., J.P., Harrogate, for greenhouse flowering plants.

Silver-Gilt Medals to Messrs. MAXWELL AND BEALE, Broadstone, Dorset, for alpines; Messrs. A. J. KEELING AND SONS, Bradford, for Orchids; and Messrs. KENT AND BRYDON, Darlington, for alpines.

Large Silver Medal to THE WELSH BULB FIELDS, St. Asaph, for Daffodils.

Silver Medals to Messrs. BAKERS, Codsall, Wolverhampton, for alpines; Mr. P. GARDNER, Ilkley, for alpines, etc.; Messrs. G. GIBSON AND CO., Leeming Bar, Bedale, for alpines, etc.; Messrs. R. V. ROGER, Pickering, N. Yorkshire, for alpines, and Messrs. A. GREENWOOD AND CO., Wetherby, for rock-garden, etc.

Large Bronze Medal to Messrs. HARKNESS AND SONS, Bedale, for Primroses.

Bronze Medals to Mr. S. GARDNER, Pool, Leeds, for a rockery; Messrs. REAMSBOTTOM AND CO., West Drayton, for St. Brigid Anemones.

AWARDS OF MERIT.

Rosa Rouletti, shown by Messrs. BACKHOUSE NURSERIES (YORK), LTD.; Brasso-Cattleya Beaumont, and Odontioda Border variety sanguinea, both shown by Messrs. A. J. KEELING, Bradford; Odontioda Meteor, shown by Messrs. MANSELL AND HATCHER.

FÉDÉRATION HORTICOLE PROFESSIONNELLE INTERNATIONALE.

THE annual meeting and conference of the International Professional Horticultural Federation was held this year at Groenendaal Park, Haarlem, in connection with the special exhibition at Heemstede.

Mr. B. Ruys, a well-known Dutch nurseryman, whose portrait, together with an appreciation, appeared in our issue of May 2, presided over an unusually large attendance of delegates. Proceedings commenced on Thursday, April 23, at 3 p.m., with an address of welcome from the President.

French delegates were present in great force, including M. Turbat and M. Rene Barbier, the Secretaries; M. Sauvage, the Treasurer; M. T. Chollet, M. Norbert Levavasseur, M. Lucien Levavasseur, M. Ernest Levavasseur, M. Graindorge, M. Royer, Dr. Saulnier, and many others. Among the Belgian representatives we noticed M. van Orshoven, M. Charles Pynaert, M. Delaruye, M. Praet, M. de Smet, M. Draps, M. de Coster, and M. van de Weghe. Mr. Bintner represented Luxembourg, and did not hide the light of his little county under a bushel. The Dutch trade was well represented by, among others, Messrs. Ruys, Jac. Smit, Wery, Krelage, and Schlochteren. Visitors from America were Mrs. King, Mr. de la Mare, and Mr. Vincent, the last an agile and by no means silent gentleman in his eighty-third year. Mr. Stahel represented Switzerland.

Representatives from the British Isles were Mr. G. W. Leak, Mr. W. R. Oldham, Mr. George Monro, Mr. C. du Cann, Mr. W. E. Wallace, Mr. Alfred W. White, Mr. T. Windle, Mr. A. S. Galt, Mr. Charles H. Curtis, Mr. C. Engelmann, Mr. J. S. Brunton, Mr. P. J. Murrell, Mr. W. F. Gullick, Mr. W. Cutbush, and Mr. S. W. Hale, while other Britishers present as visitors included Mr. H. T. Mason, Hampton; Mr. G. T. Dickson, Newtownards; Miss Rogers, London, and Mr. Jeans, Bournemouth. The Ministry of Agriculture was ably represented by Mr. W. G. Lobjoit, the Controller of Horticulture.

The lengthy agenda of nineteen items, besides extras, suggested several long sittings, but the report of the previous Conference, the General Secretary's report, and the Treasurer's report having been circulated, these occupied little time. The accounts showed a balance in hand of 3,620 francs; the principal item of expenditure for the year being that for printing. Mr. Sauvage pleaded for a better support of the Registration of Novelties Bureau, and pointed out that comparatively few new plants and varieties were registered internationally by the British and Dutch growers.

Canada and Germany desired to be admitted to the Fédération, and in each case the request was granted. Voting for the admission of Germany was taken separately by the various groups of nationals, and so soon as admission was granted two German representatives took their seats and subsequently took part in the discussions. Italy again expressed a desire for admission but pleaded inability to pay the requisite fees; a proposal to admit her for a nominal sum was negatived, because, as Luxembourg pointed out, its acceptance would create a position which other countries might take advantage of. In offering a welcome to the American visitors, Mr. Ruys expressed the hope that next year they would come again, not as visitors but as delegates. Reports indicating the state of the horticultural industry in the several countries represented were issued in printed form to the delegates. The one from Belgium, submitted by M. Chas. Pynaert, was of unusual interest, and may serve as a model for future reports. M. Turbat and the President asked that next year these national reports should be sent at an earlier date so that the delegates might have them in type early, and be able to discuss them with their own organisations before coming to the conference.

In his report, M. Pynaert referred to the loss of trade experienced in Belgium as a result of the American quarantine order; he pleaded for free trade for horticultural products, and stated that in 1924 Belgium exported ornamental plants to the value of 35,068,294 francs; bulbs, etc., to the value of 732,209 francs; and cut flowers to the value of 901,345 francs, making a total value of 36,701,848 francs for the exports of the first ten months of the year. Holland, France, and Germany appear to be Belgium's best customers, with Great Britain and Switzerland also good ones. It appeared as though so large a portion of the Agenda would be got through at the first session that business would be completed on the following morning, but those who had this hope did not reckon with the speech-making propensities of the Dutch and French delegates. The question of free trade was raised by the reports, and then tongues were loosed. Everyone who spoke, and some spoke more than once or twice, was in favour of free trade for horticultural produce—with some reservations. It was with some difficulty the President curbed the loquacity of the continentals, and finally closed the first session by adjourning further discussion of a matter on which everyone seemed to be agreed—all but!

To be continued.

TRADE NOTE.

QUAINTLY conceived and delightfully conducted, *The Covent Gardener* is something quite new in horticultural literature. The whole duty of this sixteen page publication is to advertise the goods offered for sale by the Sundries Department of Messrs. Geo. Monro, Ltd., Covent Garden, and it is edited by Mr. Stuart Monro, the chief of the department. But although Business—with a capital B—is the purpose of *The Covent Gardener*, the humorous notes and the more practical contributions are so admirable and readable that the reader cannot fail to be impressed, interested and tempted by the divertisement of the advertisements and the sundry sundries. In the January issue we learn a good deal about Raffia and the process of box making for the fruit and flower trades, and in the April issue Mr. A. T. Barnes discusses "Paper" from a horticultural business point of view, and there is an interesting article on "An Economic System of Glasshouse Heating." If the present standard is maintained *The Covent Gardener* promises to have as long a run as Covent Garden.

Obituary.

Harry G. Witney.—It is with very great regret we have to announce the death of Mr. H. G. Witney, which occurred on Sunday night last after a brief illness from which all his friends hoped he would soon recover. Mr. Witney had been in the service of Messrs. George Monro, Ltd., for thirty-six years, and for a considerable part of that time had been general manager of the flower department. He was a capable organiser, extremely popular with the buyers and with the employees in his department. He was one of the finest salesmen in Covent Garden, and an excellent judge of a flower for market purposes. Physically he was a big man, but he was also very large hearted. Mr. Witney was fifty-four years of age. He lost one son during the war, and is survived by a widow and two sons. The funeral service was held at Golders Green on Friday, the 8th inst.

ANSWERS TO CORRESPONDENTS.

Cucumber Leaves Unhealthy: *Fleet Pond.* The Cucumber leaves you sent were very much shrivelled when received by us, and it is impossible to state definitely what the cause of the trouble is. However, they appear to be of an abnormal type of growth, which has sometimes been observed as odd cases amongst a large number of Cucumbers. If you care to send fresh specimens packed in moss in a tin box we will endeavour to help you further.

Cyclamens Unhealthy: *J. H. Y.* No disease is present on the specimens you sent, nor were there any signs of insect attacks. We suspect that the trouble is due to some error in cultivation, which only those on the spot can determine.

Maggots attacking Tomatos: *C. B.* The creatures which you describe as maggots are Leather jackets, which are the larvae of the Daddy-long-legs or Crane-fly. These pests have doubtless been introduced with the rotted turf used in the beds or compost. The best method of controlling this pest is to use poisonous bait, comprised of Wheat-bran, 20 lbs.; Paris green, 1 lb.; water, 3½ gallons. Thoroughly mix the bran and Paris green in the dry condition and slowly moisten the mixture with water. The bait when used should be just damp enough so that when spread from the hand it falls into small pellets. The above quantity is sufficient for one acre, and correspondingly smaller quantities should be used for smaller areas.

Names of Plants: *Ponticus.* 1, Euphorbia Myrsinites; 2, Phillyraea angustifolia var. rosmarinifolia; 3, Azara microphylla; 4, Corydalis bulbosa; 5, Lonicera Standishii; 6, Aethionema iberideum; 7, Potentilla alba; 8, Senecio Greyi. *E. P.* 1, Prunus triloba flore pleno; 2, Lathyrus vernus. *Horticus.* Probably Populus serotina, but the species cannot be determined without mature leaves; 2, an unnamed Rhododendron seedling. Thousands of seedling Rhododendrons flower in nurseries every year, and large quantities of those not considered good enough to name are sold for shrubbery and covert planting. *E. M.* One of the many and varied forms of Rhododendron arboreum. *J. E. A.* Probably Impatiens Sultanii. *C. O. L. P., Madeira.* Feijoa Sellowiana. *W. R. B.* 1, Lathraea squamaria; 2, Muehlenbeckia complexa.

Rhododendron Leaves eaten by some Insect: *W. D. S.* The leaves of your Rhododendrons have obviously been eaten by some biting insect, but in the absence of the culprit it is very difficult to say what it is. There are at least three different insects, anyone of which might have caused the trouble: (a) the caterpillars of some moth; (b) a leaf-eating weevil; and (c) a leaf-cutting bee. We are inclined to think from the appearance of the damage that the last might be responsible. If either of the two former are suspected, spraying the plants with lead arsenate paste at a strength of six lbs. to one hundred gallons of water or three lbs. of lead arsenate powder in one hundred gallons of water would be an effective control.

Weevil in Vinery: *A. E. M.* The beetle found in the vinery is Otiorhyncus sulcatus. This, like the allied Raspberry Weevil (O. picipes), is capable of inflicting very considerable damage. In its adult stage it feeds at night time on the leaves and young buds. It lays its eggs in the soil, where the grubs do much unseen damage on the roots of plants growing in the vinery. If allowed to multiply without a check these insects may easily cause much damage. There ark two general methods of control, one against the adult Weevil and the other against the larva. Measures against the adult are of two kinds, trapping and spraying. The insects are night feeders, and advantage can be taken of this fact to catch them. The house should be entered at night-time, with a lantern, but care should be taken to avoid letting the light fall directly on the insects, and the whole operation should be conducted as quietly as possible. A sheet made sticky with tree grease or tar should be placed under the vines and the light flashed on the foliage, when the insect will drop on to the sticky surface and be caught. The other method is to spray with a strong dose of lead arsenate, i.e., eight pounds of paste or four pounds of powder to each one hundred gallons of water. The whole vine could be sprayed now as sufficiently long interval will elapse before the fruit is fit for eating. The other method is directed against the larva. Any good soil insecticide may be used as soon as the fruit has been gathered, and forked in according to the makers' directions. The object in this case is to kill any larva that may have hatched from eggs laid in the spring.

Communications Received.—W. R. D.—A. D. W.—J. B.—A. B.—J. E.—J. B.—J. S. C.—G. P.—S. B.—F. J. G.—T. W. T.—P. H. R.—A. P. C.—A. G.—J. C.—C. S.—W. A.—D. J.—J. McD.

THE WEATHER IN APRIL.

The mean maximum temperature for the month was 47.1° and the mean minimum 36.7°, giving an actual mean temperature of 41.9°, which is about 3° under normal. The highest screen temperature of 59° was reached on the 21st, and the lowest of 29° on the 3rd, an obsolute range of 30°. The grass minimum recorded ten nights of ground frost (i.e., 30.4° or below), the coldest night being the 3rd, when the temperature fell to 20° on the grass. In the soil, at one-foot deep, it rose slowly from 41° at the beginning to 46° on tke 17th, but again fell a degree during the last week. A total of 160.4 hours sunshine, being a daily average of 6.35 hours, and a percentage of 38, is quite about the average. The brightest day was the 15th, with 11.8 hours, while the 27th gave 11 hours. On five consecutive days, 5th to 9th inclusive, fog prevailed throughout, and these gave blank cards. Rainfall was considerably above the normal for April, being 2.94 inches. The wettest day, the 17th, yielded .60 of an inch. There were in all 13 rainless days. The mean barometric pressure for the month was 1008.2 millibars. The highest reading of 1025.7 millibars (= 30.290 inches) occurred on the 20th and 21st, and the lowest 982.2 millibars (= 29.006 inches) on the 15th. Winds were variable, but there were no gales. Frequent hail showers were noted during the afternoon of the 26th, while remarkable large snowflakes fell at 6.30 G.M.T. on the evening of the 28th. *John Davidson, Meteorological Station, St. Andrew's Provincial Committee, Training College Gardens, Mayfield, Dundee.*

SCHEDULE RECEIVED.

Hanley Horticultural Fete.—Exhibition to be held in the Hanley Park on Wednesday and Thursday, July 1 and 2.—Secretary, Mr. William Poulson, Town Hall, Hanley.

NEW HORTICULTURAL INVENTIONS.

Latest Patent Applications.

9,421.—Kobiolke, A. M.—Destruction of insect pests. April 8.

8,545.—Cowie, M. J. H.—Metal tie-up for plants. March 31.

8,374.—Bentley, B. J. F.—Weed extractor March 28.

7,821, 7,822.—Foster and Co., Ltd., W.—Packing seeds, etc. March 23.

7,743.—Horten, A.—Production of artificial rain for agricultural plants. March 23.

7,931.—Robinson, A. S. F.—Garden rollers. March 24.

Specifications Published last Month.

231,018.—Garbin, G., and Toniolo, S.—Phospho-nitrogenous fertiliser.

231,021.—Telfer, J. S. G.—Fertiliser.

230,535.—McLaren, H., and Herbert, L.—Apparatus for trenching between rows of plants.

209,405.—Balinsky, P. De.—Method of, and apparatus for, producing mist or fog for irrigating or treating crops.

230,662.—Henning, C. T. B.—Hand cultivators

230,148.—Illingworth, C., and Duckworth, H. H.—Fertiliser and insecticide.

Abstract Published last Month.

Preserving Fruits and Vegetables.—Patent No. 229,100.—A process of preserving fruits and vegetables has been protected in this country by a German inventor, Mr. A. Faitelowitz, of 32, Kurfurstendamm, Pension Weber, Berlin.—The products are dried to a pasty consistency in open vessels at a temperature not exceeding 80° C., being continually agitated by means of rollers. The apparatus consists of three tables, a water tank beneath the lowest table being heated by a steam coil, and the steam thus generated passing by a pipe to boxes beneath the other two tables. Rollers are carried by arms on a travelling frame, and may be brought down on to the table by means of a handle. The rollers are made in sections loosely mounted on spindles so as to accommodate themselves to inequalities in the tables. The frame also carries scrapers on arms. In place of treating the whole fruit, the fructose and acids may be extracted by alcohol, concentrated as described and mixed with the residue from the extraction.

CATALOGUES RECEIVED.

Frank Cant and Co., Braiswick Rose Gardens, Colchester.—Roses.

W. Mauger and Sons, Brookdale Nurseries, Guernsey.—Lachenalias.

Barr and Sons, 11, King Street, Covent Garden, W.C.—Bedding plants and Dahlias; flower and vegetable seeds.

Foreign.

Alfred Klapproth, Alfeld (Leine), Hanover.—Cyclamen

GARDENING APPOINTMENTS.

Mr. C. R. Gregory of the Royal Gardens, Kew, has been appointed Assistant Horticultural Advisor to the Warwickshire County Council.

Mr. W. A. Smith, for the past three years Inside Foreman at Tewin Water, Welwyn, Hertfordshire, as Gardener to C. Grahame White, Esq., Piggotts Manor, Letchmore Heath, Watford, Hertfordshire. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.)

Mr. George Brown, for the past twenty-one years Gardener to the late Lt.-Col. W. D. Winterbottom, of Arton Hall, Derby, as Gardener to Mrs. Winterbottom, Oakley Place, East Grinstead, Sussex. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.)

Mr. F. W. Dawe, for five years Gardener to the Staffordshire Education Committee at the Farm Institute, Rodbaston, Penkridge, and previously Gardener to G. Ward, Esq., at the same address, as Gardener to Mrs. Inge, The Plas, Tan-y-Bwlch, N. Wales. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.)

Mr. F. Radford, for the past six years Gardener at Mymwood, Hatfield, and previously at Ashendene, Hertford, as Gardener to J. S. Moreton, Esq., South Pickenham Hall, Swaffham, Norfolk. (Thanks for 2s. for R.G.O.F. Box.—Eds.)

MARKETS.

COVENT GARDEN, Tuesday, May 5th, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Azaleas per doz.	15 0–36 0
Cacti, per tray,	
—12's, 15's	5 0– 7 0
Cinerarias, doz.	15 0–24 0

	s. d. s. d.
Crotons, per doz.	30 0–45 0
Cyrtomium	10 0–15 0
Erica melanthera, 48's per doz.	21 0–30 0
— —60's, per doz.	8 0–10 0
Marguerites, white, 48's per doz.	15 0–18 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun.	12 0–15 0
Asparagus, plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays	1 6– 2 6
short „	0 9– 1 3
—Sprengeri, per bun.	
long sprays	1 6– 2 0
med. „	1 0– 1 6
short „	0 4– 1 0
Bouvardia, white, per doz. bun.	9 0–12 0
Carnations, per doz. blooms	3 0– 4 6
Croton leaves, var., doz. leaves	0 9– 2 6
Daffodils—	
—Barrii, per doz.	4 0– 5 0
—Emperor, per doz. bun.	8 0– 9 0
Fern, French, per doz. bun.	0 9– 1 3
Galax, American, green and bronze, per doz. bun.	— 3 0
Gladiolus, Blushing Bride, per doz. bun.	18 0–24 0
—Peach Blossom, per doz. bun.	24 0–30 0
Gypsophila, white, doz. bun.	5 0– 6 0
Ixia, red, doz. bun.	3 0– 5 0
—Mixed, doz. bun.	3 0– 4 0
Lilac, Dutch, per spikes	4 0– 8 0
Lilium speciosum rubrum, long, per doz. blooms	4 0– 5 0
—short „ „	3 0– 4 0
Lilium longiflorum long, per doz.	4 0– 5 0
Lily-of-the-Valley, per doz. bun.	24 0–36 0
Narcissus—	
—Horace, per doz. bun.	7 0– 8 0
—ornatus, per doz. bun.	2 6– 3 6
—Poeticus, per doz. bun.	6 0– 7 0
Orchids, per doz.	
—Cattleyas	24 0–36 0
—Cypripediums	5 0– 7 0

	s. d. s. d.
Richardias (Arums) per doz.	5 0– 6 0
Roses, per doz. blooms, Richmond	3 0– 5 0
—Liberty	3 0– 5 0
—Madame Butterfly	3 0– 5 0
—Mme. Abel Chatenay	3 0– 4 0
—Melody	3 0– 4 0
—Molly Sharman Crawford.	3 6– 4 6
—Niphetos	2 6– 3 6
—Ophelia	4 0– 5 0
—Sunburst	4 0– 5 0
Gardenias, per box, 12's, 18's	4 0– 6 0
Ruscus, French, per bun.	1 0– 2 0
Smilax, per doz. trails	3 0– 3 6
Spanish Iris, per doz. bun.—	
—Blue	18 0–30 0
—Mauve	18 0–24 0
—White	24 0–36 0
—Yellow	24 0–36 0
Statice, mauve	5 0– 6 0
Stephanotis, per 72 pips	4 0– 4 6
Stock, English white	9 0–18 0
Sweet Peas, per doz. bun.	9 0–18 0
Tulips, per bunch—	
—Bartagon	1 6– 3 0
—Clara Butt	1 6– 2 6
—Wm. Copland	1 6– 3 0
—Farncombe Sanders	1 6– 2 6
—White Swan	1 0– 2 0
Violas, per doz. bun.	2 0– 3 0
French Flowers—	
Anemone, St. Brigid	2 6– 5 0
Marguerite, yellow, per pad	6 0– 7 0
Marigolds, per pad	5 0– 6 0
Stock, double white, per pad 24 bunches	10 0–12 0
—double coloured	10 0–12 0
Violets, Parma, per bun.	4 0– 5 0

REMARKS.—Many subjects have increased in price during the past week, especially Daffodils and Narcissus ornatus of reliable quality. Small consignments of the former flower are coming from Scotland; the principal sorts are Emperor and Grandee. The consignments of N. ornatus are from Lincolnshire and Cambridge. Horace and other improved varieties of Narcissus are realising good prices. Amongst Tulips, White Swan is the most plentiful; good Darwin sorts are below requirements. Outdoor blooms are now preferred, although they are shorter in the stem; but they keep much longer than indoor blooms. Sweet Peas are gradually improving in quality, but high prices are maintained for best quality blooms. Small consignments of double white Stocks from home-growers are greatly welcomed. A few pads of these blooms continue to arrive from France, but they show signs of finishing for this season. Spanish Irises continue to arrive in good condition; there is still a shortage of white and yellow sorts. All Liliums which appear amongst the wholesale prices are sufficient for present requirements, but it is expected that Richardias (Arums) will shortly be reduced in quantity. Gladioli are beginning to arrive in the market, but Blushing Bride and Peach Blossom are the only two sorts available at present. Violets are now practically finished; Viola cornuta is being used as a substitute. French flowers consist mostly of Gypsophila elegans, yellow Marguerites, mauve Statice sinuata, and small consignments of double white Stock, which cannot be recommended owing to the long time in transit before it reaches here.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Albermarle	45 0–50 0
—Oregon Newtown	14 0–18 0
New Zealand Apples—	
—Cox's Orange Pippin	28 0–30 0
—Jonathan	18 0–20 0
—Worcester Pearmain	18 0–19 0
—Dunn's Seedling	17 0–18 0
Tasmanian—	
—Cox's Orange Pippin	18 0–20 0
—Jonathan	17 0–18 0
—Ribston Pippin	15 0–16 0
—Worcester Pearmain	14 0–15 0
—Cleo	17 0–18 0
—Others	13 0–14 0
Bananas	17 6–30 0
Figs, (Forced) doz.	6 0–24 0
Grapes—	
—Belgian	4 0– 4 6
—English—	
—Hambro, per lb.	4 0– 6 0
—South African—	
—White Hanepoot	6 0–10 0
—Red Hanepoot	8 0–10 0
—Colmar	10 0–12 0
Grape Fruit, Cuban	25 0–30 0
—Jamaica	25 0–30 0
—Florida, finest	25 0–35 0

	s. d. s. d.
Lemons, Messina, per box	8 0–12 0
—Murcia	12 0–15 0
—Naples	16 0–20 0
Melons (Forced)	3 0– 6 0
Oranges, Jaffa	14 0–16 0
—Spanish—	
—300's	18 0–32 6
—360's	16 0–22 0
—504's	16 0–20 0
English Peaches, per doz.	12 0–48 0
Pears, South African—	
—Beurré Diel	5 0– 7 0
—Beurré Bosc	5 0– 7 0
—Doyenné du Comice	8 0–12 0
—Josephine	5 0– 7 0
—Australian—	
—Beurré Bosc	7 0– 9 0
—Beurré Clairgeau	— 6 0
—Winter Nelis	7 0– 9 0
—Others	4 0– 6 0
Pines	3 6– 5 0
Strawberries, per lb.	4 6–10 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Artichokes, per doz.	2 0– 3 0
Beans, Guernsey, per lb.	1 6– 2 0
—Worthing	1 6– 2 0
—Madeira, per box	3 6– 6 0
Beets, per cwt.	5 0– 8 0
Cabbage, per tally	7 6–10 0
Canary Island Tomatos	18 0–25 0
Cauliflowers, per doz.	3 0– 4 0
Chicory, per lb.	0 7– 0 8
Carrots, per doz. bun.	— —
—New	4 0– 8 0
Cucumbers, per doz.	4 0– 6 0
—Flats, 36's, 42's	10 0–16 0
Dutch Onions	11 6 12 6
Endive, per doz.	1 6– 3 0
—Batavian, per doz.	3 0– 3 6
French Asparagus—	
—Cavaillon	1 6– 1 9
—Lauris	2 0– 3 6
English Asparagus—	2 0 –8 0
Greens, best, per bag	4 0– 5 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundles	2 6– 3 6
Lettuce, per doz.	— —
—Cos	8 0– 9 0
—Cabbage	1 6– 3 0
—Dutch, per crate	3 6 – 5 0

	s. d. s. d.
Mushrooms, cups	2 6– 3 0
—broilers	2 0– 2 6
Marrows, doz.	9 0–14 0
Mint, Forced, per doz.	4 0–12 0
Onions, Valencia, per case	15 6–17 0
—Egyptian, per bag	11 0–12 0
—English, per cwt.	12 6–14 0
—Spring	— 4 0
Parsnips, per cwt.	3 0– 4 0
Peas, French, per cane	6 0 8 0
—Guernsey forced per lb.	1 3– 2 0
Potatos, Canary Island	14 0–16 0
Potatos, per ton—	
—Dunbar	240 0–260 0
—King Edward	200 0–240 0
—Others	90 0–160 0
—New Guernsey lb.	0 5–0 6
—Jersey	0 5–0 6
—Scilly	0 6–0 7
—Spanish, new, per cwt.	20 0–22 0
Radishes—	
—Round	1 6– 2 6
—Long	1 3– 1 6
Rhubarb, Forced, per doz.	1 3– 1 6
—"Natural" per doz.	4 6– 5 6
Seakale, Natural, ½-sieve	8 0–10 0
Spinach, per bushel	3 0– 4 0
Tomatos, English, per lb.	1 9– 2 0
—Guernsey	1 6– 1 10
Turnips, new, per doz. bun.	6 0– 8 0

REMARKS.—Trade, on the whole, has been active, some sections being more lively than others. South African fruits have sold well, although their condition has been variable. The bulk of consignments consists of Grapes and Pears. Australasian Apples are in good demand at slightly higher prices, but at the time of writing, the tendency is not quite so firm. Hothouse fruits, such as Peaches, Figs, Melons, Grapes, and Strawberries are meeting a good inquiry and, generally, values of that class of produce are at a high level. Rather more English-grown Tomatos are available, but for the time of year, quantities are below the normal, and no doubt a few sunny days would make a deal of difference in supplies. Cucumbers are fairly numerous and their prices are steady. Choice vegetables, such as Beans, Peas, and new Potatos, as well as the earlier consignments of English Asparagus, are meeting a good inquiry. Mushrooms remain a good trade and their prices show little or no fluctuation. New Potatos from the Canaries are an improved business, in spite of the first shipment for the season of new Potatos from Spain. Green vegetables are a fair trade, and salads are going out well. Business in old Potatos is quiet.

GLASGOW.

The recovery in prices recorded in the previous report made further progress during the past week, when the cut flower market presented a more cheerful appearance than has been experienced since Easter. Daffodils and Tulips, which had suffered most, naturally reflected the greatest improvement, but the firmer tone was general, especially on Friday, when the highest values of the week were obtained. Daffodils advanced from 2d. to 3d. per bunch. Emperor and Golden Spur fluctuated between 2/6 and 4/6 per dozen; Barrii conspicuus, and ornatus, 2/- to 4/-; King Alfred, 8/-; Weardale Perfection, 6/- to 8/-: Gloria, 4/- to 6/-; Grandee, 2/6 to 3/-, and Horsfieldii, 2/- to 2/6, the latter quotation in each case representing Friday's price for special blooms. Although Tulips were not so plentiful the quality of the indoor flowers was first class. Afterglow ranged from 1/6 to 1/9 for 6's; Clara Butt (English), 1/6 to 1/8, (Guernsey), 8d. to 9d.; W. Copland, 1/4 to 1/8; Farncombe Sanders, 1/4 to 1/7; No. 1 pink, 1/3 to 1/4, and Murillo, 9d. to 1/-. For outdoor grown blooms 6d. to 8d. was paid for Prince of Austria, 9d. to 1/- for White Swan and Gris de Lin, and 6d. to 10d. for Bartagon, W. Copland, and Clara Butt. Imperator Iris realised from 2/- to 2/6 for 6's, and Guernsey Iris, 8d. to 1/- per bunch. Richmond Roses advanced 1/-, making from 2/6 to 4/- per dozen, while Madame Butterfly prices were steady at 4/- to 5/6. Carnations were dearer at 3/6 to 5/- for Aviator, Mrs. Hemus, Lady Northcliffe, May Day, Enchantress, and Wivelsfield White. Richardias and Lilium longiflorum (Harrissii) declined to 2/6 up to 5/- per dozen for the former, and 3/6 per bunch for the latter. Lilac was steady, white averaging from 4/- to 7/- and coloured from 4/- to 5/-. White Hyacinths special made 10d. for 3's; short stemmed, 6d. to 8d., pink and blue, 5d. to 6d.

Bedding plants are now arriving in greater variety. Wallflowers averaged from 1/3 to 1/9 per doz.; Daisies, 1/3 to 1/6; Violas, 1/- to 1/3; Lobelia, 1/6; and Polyanthus, 1/- to 1/6. Small Tomato plants made up to 1/6 per doz. Paul Crampel Pelargoniums brought 1/6 per pot, and Spiraea 2/- to 2/6.

A good business was transacted in the fruit market. First consignments of hothouse Grapes sold at 3/6 to 4/6 per lb. for black Hamburgh, and 4/- to 4/6 for Royal, while 18/- to 24/- per dozen was paid for English-grown Peaches. Grape Fruit commanded 28/- to 30/- per case. Scotch Strawberries sold at 7/- to 9/- per lb., and English at 7/- were cheaper. Oregon Newtown Apples are now scarce and the price advanced to 21/- per case, while Australian Jonathan, Sturmer Pippin, and Ribston Pippin ranged from 17/6 to 20/-. Pears continue to be a good selling line. Australian Calabash made 8/- to 10/-, William's Bon Chrétien, 14/- to 16/-, and Beurré Bosc 14/6 to 16/- half case, and Cape varieties were quoted as follows:—Winter Nelis, Josephine de Malines, and Glou Morceau, 6/- to 7/-; Beurré Bosc, 6/- to 6/6 Beurré Diel, 5/6 to 6/6; and Keiffer, 4/6 to 5/6. Australian Grapes averaged 22/- to 25/-, Cape Colmar, 16/- to 18/-, white Hanepoort, 10/- to 12/-; red Hanepoort, 12/- to 15/6. Murcia Oranges made 18/- to 22/- for 300's and 240's, and 17/- to 20/- for 504's and 420's, while Valencia, 200, 300, 240, and 360 sold at 12/6 to 18/6, and 420's at 28/- to 32/-. Jaffa Oranges made 10/- to 13/-.

In the vegetable section French Carrots and Turnips realised 9d. to 10d. per bunch; Asparagus 1/6 to 2/3; English and Scotch Cucumbers, 6/- to 9/- dozen; Seakale, 12/- sieve; Syboes, 6d.; English and Dutch Lettuces, 2/- to 2/9 dozen; Beet, 6/- bag; Teneriffe Tomatos, 32/- to 38/- per bundle; Guernsey, 1/9 to 2/- per lb.; Peas 5/- bag; Broad Beans, 4/-; Canary Potatos, 12/-; Polmont Rhubarb further advanced to 56/- cwt.

NETTINGS
GARDEN NETS.—For Fruit Protection.
Any lengths and widths. Corded all round.
New.—1 in. sq. mesh heavy, 6½d. sq. yard
New.—1 in. sq. „ medium 5½d. „
New.—¾ in. sq. „ light 5½d. „
New.—⅝ in. sq. „ medium 7½d. „
Repaired.—1 in. sq. mesh, 3½d. „
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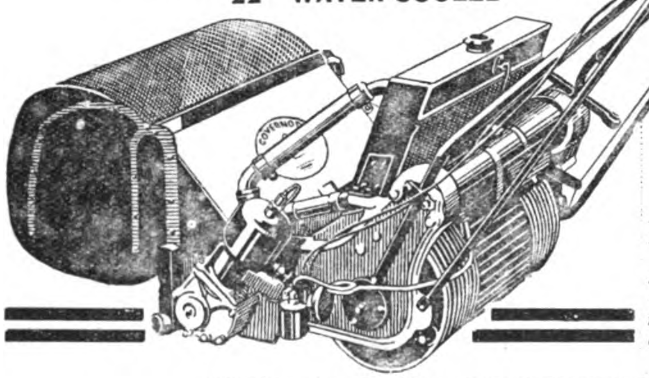

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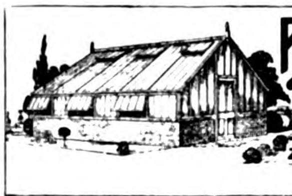

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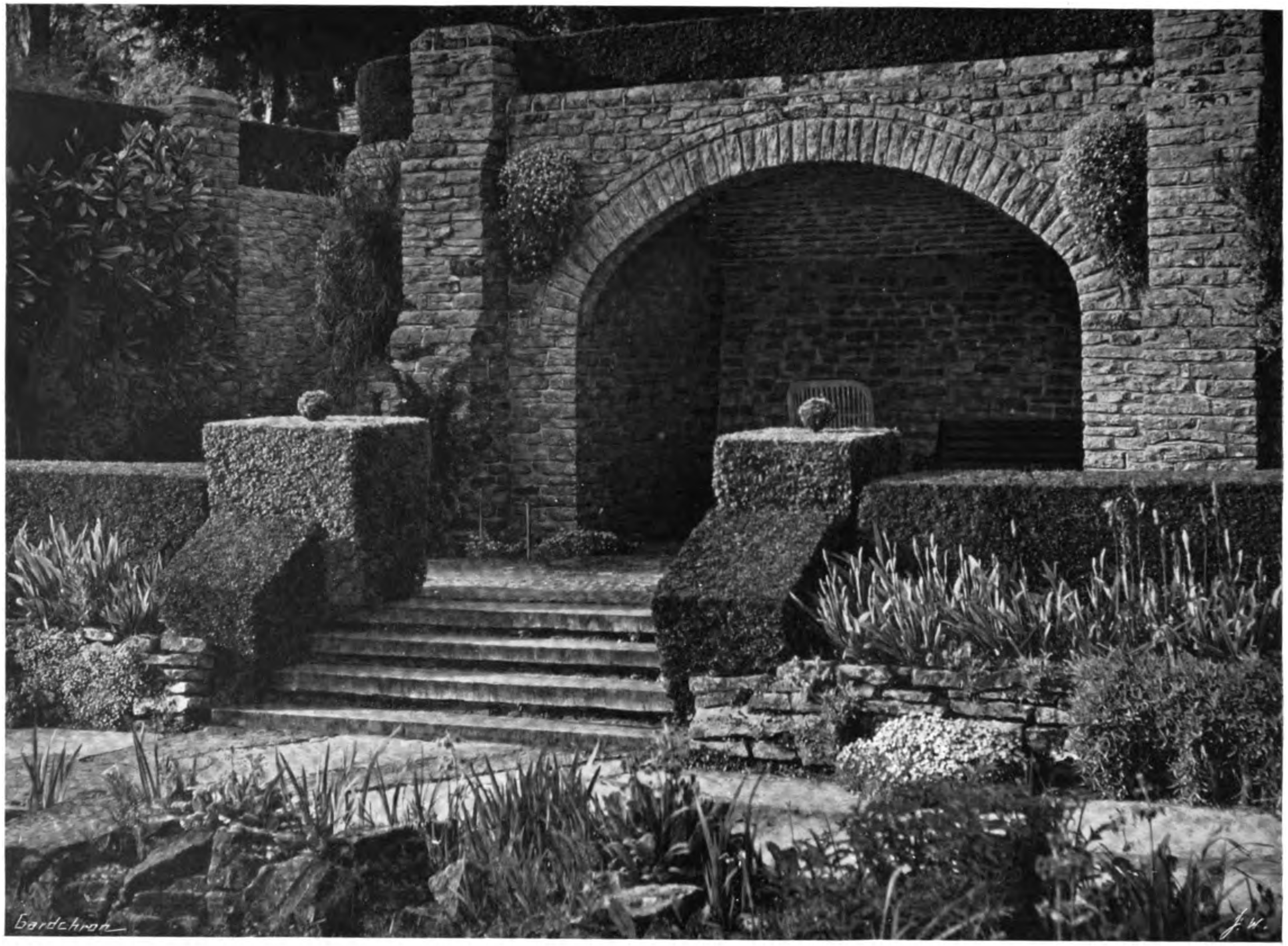
Gardchron
J.W.

THE GARDEN HOUSE AT SEDGWICK PARK, HORSHAM.

THE
Gardeners' Chronicle
No. 2003.—*SATURDAY, MAY* 16, 1925.

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SUPPLEMENTARY PLATE.
Garden House at Sedgwick Park, Horsham.

AVERAGE MEAN TEMPERATURE for the ensuing week deducted from observations during the last fifty years at Greenwich, 54·2°.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, May 13, 10 a.m. Bar. 30·3, temp. 60°. Weather, Sunny.

Mr. F. Kingdon Ward's Lectures at the Royal Institution.

APART from their interest to explorers, botanists and gardeners, the two lectures recently given by Mr. F. Kingdon Ward at the Royal Institution, on the romance of plant hunting "on the roof of the world," were chiefly remarkable for the unusual quality of the many photographs shown on the screen. Of late years, pictorial photography has reached a high level of excellence, and as with Dr. McGovern's story of his perilous journey to Lhasa, and the account of the Everest expedition, Mr. Kingdon Ward's pictures, taken under almost insuperable difficulties, add much to the value and interest of such work. Apart, too, from the valuable records such pictures furnish, they have the supreme merit that, better than the spoken or written word, they enable stay-at-home folk to realise the grandeur and vastness of the remote regions of the world, and especially in this case, the prodigal wealth of tree and plant life found there. Those who have followed Mr. Kingdon Ward's footsteps as recorded in the columns of *The Gardeners' Chronicle*, will remember that in his expedition of last year, he struck new ground at the eastern end of the Himalayas approaching his objective along the course of the Tsanpo river for about two hundred miles westwards from the point where the trade route from India to Lhasa crosses the river north of Gyangtse. From the time the Indian frontier was crossed till the explorer returned, the expedition was on Tibetan soil, and in view of the difficulties known to have been experienced in other directions in obtaining sanction for exploration in parts of the country, it says much for the staff work of Mr. Kingdon Ward's expedition that he received official sanction for it from the governments concerned. It is to be hoped that, the ice having apparently been broken, the way may be made easier than hitherto for all explorers; their number can hardly be considerable. From an explorer's point of view, the *clou* of Mr. Kingdon Ward's lectures was his description of the huge gorge, about ninety miles long, which the Tsanpo has cut for itself to a depth of nearly ten thousand feet through the Himalayas, south eastward from about the point where the 94° and 30° lines intersect. On each side of this gorge and but fourteen miles apart, a vast mountain range towers up to the eternal snows, and between them the flora is as diverse as it is beautiful. Sometimes the gorge itself is narrowed to a width of only sixty yards, with precipitous rocky banks from one to two thousand feet high, and through such bottle necks the confined waters of the river—normally a third-of-a-mile wide—rush in a raging, boiling torrent. Such places make the actual passage of the Tsanpo impossible for anything but a cork, and travellers must perforce take to the mountain paths, coming down to the river where the banks permit. The vegetation is so dense that nearly three weeks were occupied in the transit of the gorge, and plant collecting was rendered more difficult by the high winds which spring up daily at about eleven o'clock and continue till dusk. If to that is added the consistently wet weather of May, June, and July, it is clear that plant collecting in the Tsanpo gorge is no child's play. As yet it is too early to gauge the results of the expedition for botany and horticulture, but, in some measure, Mr. Kingdon Ward's discoveries may be of assistance in the elucidation of the long-debated relation of the flora of the eastern end of the Himalaya to that of the mountainous region of western China. Meanwhile, there is plenty for botanists and gardeners to be going on with, for among the genus Primula alone, Mr. Kingdon Ward made some astonishing "finds." One species, which he regards as a Tibetian representative of the Himalayan P. sikkimensis, grows over four feet high, with upwards of a hundred fragrant, orange-coloured blooms, and, more remarkable still, was always found growing in running water, sometimes so thickly as to partially block the stream. Fragrance is a quality not too noticeably perceptible in Primroses as a genus, but among the Tibetan species there was another of the P. sikkimensis type with lemon-tinted flowers which scented the air for some distance. Equally astonishing is a beautiful fragrant, ivory-white-flowered Meconopsis, so rare that only seven specimens were seen and but one or two seeds collected. Meconopsis provided another surprise in a *perennial* species, found growing only in woods, and as it comes from comparatively moderate altitudes, Mr. Kingdon Ward thinks it may prove amenable to cultivation; the flowers are sky-blue. Fragrance seems to be a characteristic of Tsanpo plants, for Mr. Kingdon Ward found a sweetly-scented Lily of the Martagon section, and fragrant Rhododendrons. One of the lecturer's photographs showed a mountain-side covered, Heather fashion, with a dwarf, scarlet-flowered Rhododendron species, and many other Rhododendrons were gathered into the explorer's net. One of these was a magnificent species with blooms of an orange tint and foliage of metallic blue-green, presumably not unlike that of R. aeruginosum. Among a heterogenous collection, Gentians, Lilies and Nomocharis are well represented in the explorer's discoveries, and it is to be hoped that some of these may show their quality during the next few years.

Our Supplementary Plate.—Garden houses or tea houses are desirable is every large garden, and, fortunately, there is room for an infinite variety of design and construction so they need not offend the eye no matter what the style of the garden may be. In the Supplementary Plate accompanying the present issue a delightful garden house is depicted, composed of stone and recessed in a peculiar fashion. This garden house is at Sedgwick Park, Horsham, the residence of Mrs. E. C. Henderson, and, while wonderfully sheltered by formal hedges, it commands views of a part of the garden devoted to Irises and other early-flowering plants.

Allotment Holders' Congress.—Members of the Cabinet and representatives of many countries will be among those attending the annual congress of the National Union of Allotment Holders at Caxton Hall, Westminster, on May 30th, when Mr. D. P. Collins, of the London, Midland and Scottish Railway, will be elected, unopposed, as President. The National Union is believed to be the largest organisation of the kind in the world, and the L.M.S. Federation is the largest society in Great Britain, having 13,000 members. Mr. Collins, who was born and bred in the shadow of Euston Station, is chief clerk in the goods' rates office.

William L. Schaffer Memorial Medal.—The Pennsylvania Horticultural Society has instituted a medal, struck in gold, in honour of William L. Schaffer, President of the Society from 1867 until 1883. He financed the building of the first horticultural hall in Philadelphia, and when this hall was destroyed by fire rebuilt it and placed it at the disposal of the society as heretofore. He was a member of the Pennsylvania Horticultural Society for thirty-four years, and his entire estate, which he bequeathed to his sister, was left by that lady in trust for the benefit of the Pennsylvania Horticultural Society. Mr. James Boyd is the recipient of the first Medal. Mr. Boyd has been President of the Society since 1918.

Kew Guild.—The Annual General Meeting of the Kew Guild will be held at the Imperial Hotel, Russell Square, London, W.C. 1, on Wednesday, May 20, at 6 p.m. The President-elect of the Guild, Mr. William Dallimore, will preside at the Annual Dinner, following the General Meeting, at 7.15 p.m.

Centenary of Huxley.—To mark the centenary of the birth of Thomas Henry Huxley on May 4, a special supplement of fifty-five pages was published by *Nature* in the issue for May 9. The Supplement includes articles on the famous scientist by authorities in almost all the domains of science. Those by Sir W. T. Thiselton-Dyer, Prof. F. O. Bower, Prof. S. H. Vines, and Mr. W. Bateson, F.R.S., are especially interesting from a botanical aspect, for they show the great influence of Huxley at a time when zoology and botany were making rapid progress. Sir W. T. Thiselton-Dyer's article entitled, "Plant Biology in the Seventies," is especially interesting to gardeners, for it contains an account of Sir William's earlier career, leading up to the time when he was appointed Assistant-Director of Kew, and he shows that Huxley's first love was botany, and that it was the subject of his first prize. Huxley attended Lindley's lectures at the Chelsea Botanic Gardens and won another prize, a Gold Medal, offered for competition by the Society of Apothecaries. Sir William joined with Huxley in writing the preliminary article on biology in the ninth edition of the *Encyclopaedia Britannica*, which was published in 1875. Prof. Vines shows that the impulse that Huxley gave to biological study materially affected the teaching of botany in Great Britain, proving that plants, though different to animals, are equally the manifestation of those fundamental properties of the protoplasm of which both plants and animals consist. The supplement contains some excellent photographs of Huxley, including one showing him in his study at Marlborough Place, London, where he did so much of his work, and another reproduced from the portrait painted by his son-in-law, the Hon. John Collier.

Bees and Flowers.—*Nature* prints a *resume* of a recent paper by Frisch describing the methods by which bees notify to the members of the same hive the existence of a rich source of honey. This observer states that he noticed after a bee had returned to the hive after finding an exceptional supply it performed a rapid dance lasting from thirty to sixty seconds. He also observed that the performing bee was stroked by the antennae of other bees, which, emerging from the hive, started for the source of honey, the existence of which had been communicated to them in the manner described. After collecting their honey-loads they in their turn regain the hive and exhibit the same dancing movement, thereby enlisting additional recruits for the exploitation of their find. Frisch has produced evidence to show that bees possess a scent-gland by which they secrete a volatile substance at the honey source, and this, together with the scent of the flower, is said to guide the bees to their destination.

Annual Tasting-Day at Long Ashton.—On the first Thursday in May twenty-one years ago a small party of experts congregated in a little lean-to building, which was called the laboratory, at what was then the newly-formed National Fruit and Cider Institute at Long Ashton, near Bristol, to sample the first lots of cider that had been made, and incidentally to inspect the results of early trials in orcharding and fruit culture. Not one of that little party dreamt that the twenty-first birthday of official cider-tasting would see the changes in the establishment that were observed at the gathering on May 7th last. In the first place, the modest Fruit and Cider Institute is now a Research Station attached to the the Bristol University, equipped with laboratories and a large staff of scientists engaged in grappling with many problems in fruit culture, as well as extensive plantations devoted to the cultivation of different kinds of fruit. Cider now, in fact, may be termed a side line, but "tasting-day" seems to grow in popularity, and the recent event was the most successful of the series, as there were upwards of five hundred people present, representing commercial cider-making, the beer-brewing interest (which has now taken up cider), the Ministry of Agriculture, and a host of other people who, if they do not visit the station on any other occasion, always turn up on Tasting-Day. It was not only an enjoyable day, but a thoroughly instructive one, and after the visitors had sampled the single-variety ciders, the blends, and ciders that had been subjected to different methods of treatment, they were formed into parties and escorted through the laboratories and round the plantations, when the many trials and experiments in operation were explained to them. For some, the day was not long enough to see all they wished to see, and perhaps the most gratified persons in the big gathering were the remaining few—the others were gone—of that party who met at Long Ashton twenty-one years before. They felt—and rightly so—that they had accomplished something in being instrumental in establishing what is now a highly-important Research Station devoted to the interests of fruit-culture and cider- making.

Dr. G. Claridge Druce.—Although recognised as one of the greatest living authorities on British plants, Dr. G. C. Druce is also a traveller and a historian as well as a botanist. Over a long period of years he has been a contributor to our columns, especially with reference to new and rare British plants and interesting matters relative to old gardens, gardeners, and botanists. He is Fielding Curator in the University of Oxford, and quite recently exhibited at one of the Royal Horticultural Society's meetings a group of fifty British plants which he himself had discovered or described. Some of the most notable of these discovered or described plants are Bromus interruptus, Druce; Orchis praetermissa, O. Fuchsii, O. O'Kellyi, Potamogeton Druceii, Centaurea Drucei, Bursa Druceana, Mentha rubra var. Drucei, Euphrasia septentrionalis atroviolacea, E. variata, Saxifraga Drucei, Crepis Druceana, Gentiana Pamplinii, G. septentrionalis, Rumex arifolius, Agrostis verticillata, Spergularia atheniensis, and Koeleria vallesiana. Dr. Druce took first honours in the major examination of the Pharmaceutical Society; for ten years he was an examiner for the Society, and was elected President of the Pharmaceutical Conference in Dublin, 1901, and Dundee, 1902. He was Mayor of Oxford City in 1900-1901, and is D.Sc. Oxon. (1924), Hon. M.A. Oxford (1889), and Hon. LL.D. St. Andrews (1919). Dr. Druce is a prolific author, and has written floras of Oxfordshire, Berkshire, West Ross-shire, Buckinghamshire (in the press), and of his native county, Northamptonshire. He is also author of *Flora Zetlandica*, and has written a Biography of George Don, the articles on botany for several county histories, and Notes on Dubious Plants of Britain. He founded the Natural History Society of Northamptonshire and the Ashmolean Natural History Society of Oxfordshire. For twenty-three years he has been Hon. Secretary of the Botanical Society and Exchange Club of the British Isles and editor of the Club's *Report*. Dr. G. Claridge Druce has travelled extensively in all continents and has just returned from an extended journey in Egypt, Syria, and Palestine.

DR. G. CLARIDGE DRUCE.

Legacy to a Gardener.—The late Mrs. Ellen Sarah Mappin, of Headley Park, Epsom, who died on March 16, bequeathed £500 to her gardener, Mr. Thomas Beeson.

National Botanic Gardens of South Africa.—From the *Report* recently published for the year 1924, we gather that the National Botanic Gardens of South Africa, at Kirstenbosch, are sadly in need of funds for the purpose of carrying out their work efficiently. The Director states that urgently necessary work has been held up owing to inadequate funds, with the result that extravagant expenditure is required to maintain the nursery plants, which would cost less and be much more satisfactory in the open ground, and he confidently asserts that with a doubled income the Gardens could do at least four times the amount of work that they do at present, and could do it more economically and with greater advantage. It is pointed out that the National Botanic Gardens Advisory Committee recommended, in 1922, that the Government Grant-in-Aid should be raised at once to £3,500. Unfortunately, this advice was not taken by the late Government, and so Kirstenbosch has been starved and prevented from doing its proper work by the penurious official attitude towards it. The general public has contributed generously throughout, and it is now incumbent upon the Government to act in a similar spirit, and so endow the Gardens to enable them to work out their own destiny. We gather that Sir Otto Beit made a donation of £500 towards the development of the Gardens; Sir Lionel Philips contributed £100, and there have been some bequests, which have been placed to capital account. The *Report* of the Curator, Mr. J. W. Matthews, contains some interesting items, and refers to a Cycad Amphitheatre with South African annual and herbaceous plants planted among the Cycads, together with about 1,500 seedlings of various species of Ixia. A Protea Garden, about half an acre in extent, has been formed in which over 600 Proteads are massed in their various species. Then there is an Aloe Kopje with a Lachenalia path, which sounds very interesting. There is a Daisy Garden for various species of Compositae, and a Heath Garden which has been prepared to receive a total of 680 seedlings of various species of Erica, in addition to 250 seedlings of various Kirstenbosch Heaths. We learn also that on various occasions collections of species of native plants have been exhibited at numerous exhibitions in South Africa, and comprehensive collections of Proteas and other collections of flowering plants were cut last year, as required, for exhibition at Wembley, and a collection of valuable seeds and bulbs was sent to the Royal Horticultural Society, Wisley, for cultivation for the South African Rockery. No fewer than eight demonstrations on practical gardening were given on Saturday afternoons in the Gardens, at the request of the Botanical Society. Materials for 457 specimens have been submitted to the Bolus Herbarium, of which no fewer than 391 have been named, and probably 35 are new species. Rainfall at Kirstenbosch for the year 1924 was 48·58 inches, the second lowest since 1914. The lowest rainfall in any month was 0·06 inch in December. We congratulate the authorities of Kirstenbosch on the work they have accomplished, and upon the interesting *Reports* they have published, and hope that an improvement in the financial position will result in increased usefulness.

Guild of the Edinburgh Royal Botanic Garden.—With the object of reviving the interest in and arranging for the continuance of the *Journal* of the Guild a meeting has been arranged to take place in the Lecture Hall of the Royal Botanic Garden, Edinburgh, on May 20, 1925, at 7 p.m. The Secretary (pro. tem.) Mr. A. McCutcheon will be glad if all old members of the Guild who find it possible will endeavour to attend, and he will also be pleased to receive any addresses of those who have served in the Royal Botanic Garden, or who have changed their address since the publication of the last number of the *Journal*.

Romance of the Genus Browallia.—Dr. A. B. Rendle, of the British Museum (Natural History), South Kensington, points out that the American version of the romance of the genus Browallia, as published on page 310 of our issue for May 9, is merely a variant of the legend given in *The Gardeners' Chronicle* of 1891 (Series 3, Vol. 10, p. 188). This latter is quoted in Dr. Jackson's recent translation of Fries' *Life of Linnaeus* where the absurdity of the story is pointed out. The original specimen of Browallia on which Linnaeus founded the genus in his *Hortus Cliffortianus* is in the British Museum Herbarium, written up by himself. The plant was sent to Linnaeus by Philip Miller under the name of Dalea (given to it by Miller in honour of the botanist Dale), but Linnaeus changed the name to Browallia (see Miller's *Dictionary of Gardening*, eighth Edition, 1768). Dr. Rendle observes that the original species of Browallia was, as is pointed out in the *Life of Linnaeus*, Browallia americana (*Linnaeus Species Plantarum*, p. 631, 1753), and the three species, B. demissa, B. elata, and B. alienata, were published simultaneously in Linnaeus's *Systema Naturae*, tenth Edition, 1759, "four years after the death of Bishop Browallius."

Appointments for the Ensuing Week.—Tuesday, May 19: Royal Horticultural Society's show at Chelsea (five days); Winchester Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting. Wednesday, May 20: Kew Guild annual meeting and dinner. Friday, May 22: Association of Economic Biologists meet. Saturday, May 23. Wakefield and North of England Tulip Society's show (four days).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Escallonia macrantha.*—Messrs. Veitch and Son have much pleasure in calling attention to the above beautiful Escallonia (figured in Curtis's *Botanical Magazine* for October 1849, and therein described as "assuredly the handsomest of all the known species.") It has proved a perfectly hardy evergreen shrub, having stood in the open border during the last severe winter, free from injury, without any protection whatever. The foliage is a dark, glossy green, habit compact and good, and an abundant bloomer through the summer and autumn; it is altogether a fine plant and one they can confidently recommend. Fine, well-established plants on and after June 1 at 21s. each; one plant over to the trade on every three taken. A coloured plate and letterpress description may be had (postage free) on application, enclosing six postage stamps. Also ready, on and after June 1, the following new and desirable plants; viz., Oxalis elegans, elegant Wood-Sorrel from Peru. This beautiful Oxalis, figured and described in Paxton's *Magazine of Gardening* for October 1849, also in Curtis's *Botanical Magazine* for January last, was exhibited and received a medal at the London Horticultural Society's meeting, Regent Street, July 1848. It has stood three winters uninjured, without shelter, in the open border, and may, therefore, be considered a hardy plant. It is an abundant bloomer, flowering from June till November, and a very desirable plant for the flower garden. Good, established plants 5s. each, or six plants to the trade for 21s. Calceolaria grandis, a dwarf, compact, evergreen, shrubby, Peruvian species, with green, glossy foliage and an abundant bloomer; exhibited at Chiswick, May 1849, when the large, silver medal was awarded it. Good, established plants 5s. each, or six plants to the trade for 21s.—Exeter, May 18. *Advertisement in Gard. Chron., May* 18, 1850.

Publications Received.—*The Lilies of Eastern Asia.* By Ernest H. Wilson. Dulau and Co., Ltd., 34-36, Margaret Street, W. 1. Price 25s. net.

FLORISTS' FLOWERS.

THE PANSY.

The Pansy, Viola tricolor, is an old favourite in gardens, and it is a delightful subject for the spring garden. Following the wealth of yellow produced by the Daffodils, the rich hues of the Pansy flowers are most welcome.

Pansies may be raised from cuttings and from seeds; the latter method is now most favoured in gardens. Seeds may be sown thinly in boxes and placed in a cool frame in a shady position. Transplant the seedlings on rich land, and in the autumn lift them carefully with balls of earth attached to their roots, and plant them in their permanent positions in the flower garden. The first flowers are sometimes of poor quality, and it is often advisable to pinch off the buds until a stocky, thoroughly-established plant is produced, one capable of developing good flowers. The seeds may also be sown on a prepared bed in the open ground during the summer. If the seedlings are thinned to about nine-inches apart they may remain in the seed-bed until transferred to their final positions.

Sparrows are often troublesome to these plants very early in the season. Black thread stretched over the beds will act as a permanent deterrent to these birds. Quassia-flavoured water may also be used, but the effect of this is not lasting, and requires repeating after heavy rains.

The flowers should be removed so soon as they begin to decay, as this will prevent exhaustion of the plants through seeding. A top-dressing of old manure or leaf-mould is very beneficial to Pansies, as not only will these materials stimulate the plants, but they will serve also to keep the roots cool and moist in hot, dry weather.

Plants producing exceptionally good flowers may be propagated by cuttings. Insert the cuttings in a bed of sandy soil under the shade of a wall and cover them with a hand-light or frame. Although the Pansy is not fastidious, there are certain conditions under which it fails—stagnant water at the roots is unfavourable, also a burning heat on a dry soil. A rich, moist, sandy soil, and a cool climate are ideal conditions for the plants.

There is a strain of Pansies which is very early-flowering; sown at the usual time the plants commence to flower during the autumn and continue to bloom during the winter, except during severe weather. *C. Ruse.*

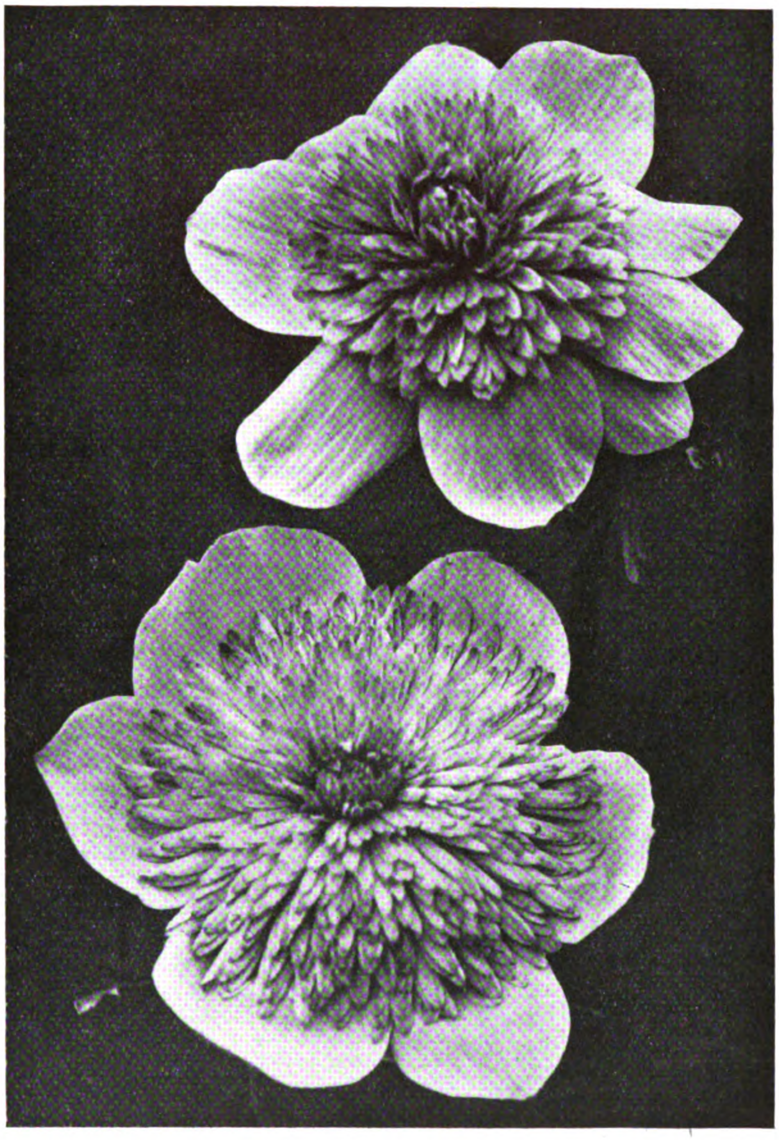

FIG. 140.—ANEMONE HORTENSIS VAR. BLUE GOWN.
R.H.S. Award of Merit, May 5.
A charming double, deep blue variety (see p. 325).

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Phalaenopsis.—The majority of the plants of Phalaenopsis in the East Indian house have passed the flowering period and commenced to make new leaves; they are also showing renewed activity at the roots. This is the most suitable season to ascertain if new baskets, pots or cylinders are required; fresh rooting materials are necessary each year. Either of the receptacles mentioned may be used, but I prefer ordinary Orchid pans. In any case efficient drainage is of first importance, and a large quantity of soil is not needed. A layer of clean Osmunda fibre cut in short portions, and clean, live Sphagnum moss will suffice. Plants growing in Teak-wood baskets that have become decayed should be provided with new receptacles. In order to remove the plants it is best first to immerse the baskets in tepid water for a short time; this will cause the roots to be more easily detached from the wood. The wire that holds the basket together should be cut and the bars of wood removed singly; the roots may be detached with the blade of a thin knife. If the receptacle is sound, the old rooting materials should be taken from between the roots, and afterwards all small portions washed out by the aid of a syringe. Then fill the spaces between the roots with the new compost, and finish with a layer of clean heads of Sphagnum moss over the surface. Plants growing in pans should also be cleaned and afforded new rooting materials. The surface moss should be sprayed twice daily in order to cause it to become green and healthy, until the plants have rooted freely; these Orchids should be watered liberally throughout the summer, but it is important that the rooting materials should be allowed to become rather dry between each application of moisture. Phalaenopsis delight in a high day temperature from sun heat, and a humid atmosphere, while fresh air should be afforded on all favourable occasions. The plants will grow equally well either when placed on the stage on inverted pots or suspended from the roof rafters. They should be shaded from bright sun at all times.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Polyanthus.—Although one of the most common of garden plants the Polyanthuses make a most brilliant display during the spring and this year they have been remarkable for the wealth and size of their flowers. On light, sandy soils, such as exists in this part of Surrey, good cultivation is necessary to bring them to perfection, but the abnormal moistness of the past season has benefited the plants greatly on such soils and the florescence is abundant. Unless annual division is practised it is wise to raise plants from seeds every year and discard them after the second year. A packet of seeds of the Munstead strain sown in spring will produce plants of a variety of shades which will flower the following spring. Where bedding schemes necessitate uniformity of colour, these plants may be divided and grouped in colours. If this is done carefully at the present time or immediately the flowers have passed and the plants receive attention in the matter of watering and mulching, they may be kept in vigour for a series of years. If not divided the plants rapidly deteriorate after the second year. Short, partially decomposed vegetable refuse, such as that obtained from lawn mowings and leaves fermented in a heap makes an ideal mulch and is easily applied.

Zonal Pelargoniums.—In spite of the fact that the Zonal Pelargonium has had to cede some of its earlier pride of place to other plants, it is still very largely grown, though in fewer varieties, in the summer bedding schemes, as proved by the immense number of plants offered for sale in the various markets at this season. Paul Crampel is one of the best varieties and for a rich shade of crimson-scarlet cannot be beaten. Those who have seen the large beds of this variety in the front of Buckingham Palace must admit that the plant has something irresistibly cheerful about it and that for producing a blaze of colour over a long period it is extremely valuable. King of Denmark may be considered its counterpart in pink and is also a good variety for large scale planting. Victory is a less vigorous variety of a beautiful shade of salmon-pink and very suitable for smaller beds or vases. Zonal Pelargoniums are essentially dry weather plants and frequently thrive in periods of drought when other plants suffer.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Souvenir de la Malmaison Carnations.—During their flowering period these plants should be afforded accommodation in a house which is provided with sun-blinds, for, as the flowers expand, they should be shaded from bright sun to prevent burning and loss of colour. The earliest of the two-year-old plants are now flowering freely. Attend to the disbudding and staking of later plants, and feed them frequently with weak liquid manure and with an occasional application of soot-water. Plants raised from layers last summer and now growing in six-inch pots, having been grown under the coolest possible conditions, should provide flowers in succession to those from the older plants. Keep a sharp watch for green fly and fumigate the plants on its first appearance, otherwise the flowers may be hopelessly spoilt.

Bulbous Plants.—The old flower stems should be cut away from Lachenalias, Freesias, and Tritonias so soon as the flowers have lost their freshness. With a view to their future flowering, these plants need careful attention at this stage in the matter of watering and gentle feeding for some few weeks longer. Grow them in a position near to the roof-glass in a cool house or frame in full sunshine, where they may be enabled to thoroughly mature their bulbs. Tritonia Prince of Orange with its pretty, orange-red flowers, forms a valuable addition to the spring-flowering, pot-grown bulbs. Given the treatment suggested above, after flowering, the bulbs will increase in size and in numbers, and the majority of them may be relied upon to flower in the following spring.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Alfred Pam, Wormley Bury, Broxbourne, Herts.

Strawberries.—The latest batches of pot Strawberries growing on shelves near the roof-glass will require an abundance of water, especially during a bright spell of sunshine after a dull period, and the plants should be examined for water at least three times daily. Feed the roots with weak liquid manure three times a week until the fruit begins to turn colour. Guard against attacks of red spider, which will soon make its appearance if the plants are allowed to become dry at the roots. The plants may be syringed twice daily until the berries commence to ripen. If green fly appears, fumigate the house lightly before the fruits ripen. If the plants that have been forced are required for planting out they should be well watered until the ground is ready for receiving them. If these forced Strawberries are planted early they sometimes give a crop of fruits in the autumn. In the case of the earliest forced plants I find it advisable to remove the flower spikes of those from which runners are to be layered. These make the finest and best ripened crowns.

Peaches and Nectarines.—Successional Peaches and Nectarines require constant attention. Disbudding and tying-in the young shoots should be done as quickly as possible owing to the trees making rapid growth. If allowed to reach the roof-glass before they are tied many shoots may be broken out and the shape of the tree spoiled. Do not allow overcropping, otherwise the fruits will not finish well and the flavour will be inferior. Syringe the trees twice daily, thoroughly wetting the foliage underneath. If red spiders have been troublesome in previous seasons watch the trees closely for their presence, and dust the leaves with green sulphur. Royal George is very susceptible to mildew in some houses, and ventilation must be given carefully to prevent cold draughts. See that the trees are given plenty of water just around the stem. This is overlooked sometimes when examining borders with trellis paths. Use a little fire-heat during cold nights and when the weather is damp.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Vines on Walls.—At one time vines were grown extensively in the open, but in later years their cultivation out-of-doors has been largely discontinued, mildew being most disastrous to their growth. Hardy vines are still grown in the south-western counties, mostly on the old cottages, but the bunches only ripen satisfactorily in very hot summers. When the plants are grown for ornament as well as for their Grapes they pay for a little extra attention in their cultivation. They are very useful for covering walls, trellises or buildings facing south. Where the rods are trained three feet apart, the side growths at intervals of twelve inches to fifteen inches and the young growths pinched at the first or second leaf beyond the bunch, the laterals may be removed so soon as they appear and this work should be done on similar lines to the cultivation of vines under glass. If the fruit is a consideration, the bunches should be thinned carefully and the berries protected from damage by birds and wasps when they are ripening. The foliage of certain varieties is pretty in the autumn. Varieties most suitable for outdoor cultivation are those of the Sweetwater family, Miller's Black Sweetwater, Grove End Sweetwater, Frontignan and Purple-leaved.

Newly-Planted Trees.—These should be examined at the stems and if they have been loosened in the soil by winds they should be made firm by treading the surface soil very firmly about the roots and close to the stems. Stakes should be made secure if they have become loosened, all ties examined and fresh ones substituted where necessary.

Plums.—When Plums have set their fruit and the latter are swelling keep a sharp watch for green fly, which is always in readiness for an attack, irrespective of the weather conditions. Spray the trees with Quassia extract at the strength advertised and if the application is not effective use it again at a little greater strength. Quassia extract is a safe insecticide to use.

Silver Leaf.—Keep an eye on Apples, Cherries and Plums for Silver-leaf and if any sign of the disease is apparent cut away the effected part at once and burn it.

Hoeing.—At this time of year seedling weeds appear on the surface in great numbers, and the hoe should be used frequently, especially in hot, sunny weather; hoeing will also promote a fine tilth and keep the surface soil open.

Peaches and Nectarines.—So soon as the flowering season of these fruits is over and the fruits set spray the trees with Quassia extract to check aphis which attacks the foliage; this specific deposits a bitterness on the leaves and makes them very distasteful to the aphides.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Tomatos.—The earliest plants of Tomatos will be furnishing ripe fruit from now onwards. Air should be admitted freely on all favourable opportunities in order to maintain a dry atmosphere in the house. The present is a suitable time to feed the plants judiciously, as the later trusses are swelling their fruits. Give the roots occasional applications of diluted liquid manure, varying this with an application of some good artificial manure. I have great belief in a change of food for Tomatos, and in fact for all vegetable crops. The last batch of Tomatos for carrying on supplies indoors should be placed in their final quarters, whether planted in pots or boxes, leaving ample space when potting for one or two liberal top-dressings. It is a mistake to fill these large receptacles at once, as the soil in many cases only becomes sour. The plants for growing out-of-doors should be potted on, if necessary, and kept growing steadily until June, when they may be planted out in a warm position.

Thinning of Crops.—This is a most important operation at this season of the year, as week by week some crops will require thinning. Carrots, Turnips and Parsnips should be thinned to regular distances apart, but unless large specimens of Onions are required, these need not be thinned to any great extent, so as to get as great a yield as possible of bulbs of a reasonable, usable size. In thinning Beetroot transplant some of the seedlings where there are gaps in the rows, choosing a time when the ground is moist for this operation.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Campanula pyramidalis.—Pot plants of the blue and white varieties of the Chimney Bellflower, grown from seeds sown in the autumn may now be placed in the border where they are intended to flower. If planted in groups numbering from three to five they will give a good effect when in bloom. Although the flowering spikes of these plants are fairly tall do not place them too far back in the border, for thus planted the full beauty of the plants will be missed; rather place fairly well in the foreground.

Pleasure Grounds.—At this time of the year turf, and especially that growing near or under trees, is often in a very unsatisfactory condition from drip and shade. This may be made good annually at a small cost and with little labour if grass seeds are sown. A good method before sowing the seeds is to first pass a quantity of old potting soil through a quarter-inch sieve and to mix the grass seeds thoroughly with it, sowing the soil and seeds on the patchy ground.

Early Potatos.—Small plantations from sprouted tubers made on a sheltered border will now be showing the haulms, which should be protected from ground frosts by drawing up sufficient earth to cover them, or Spruce branches may be used as a protection until growth is sufficiently advanced to enable the row to be earthed. Before doing this latter operation, first work the ground well between the lines with a fork or cultivator; this will enable the soil to be drawn to the plants easily, and is also most beneficial to the crop.

Onions.—Young Onion plants raised from sowings made at the end of March are visible in the rows, and the hoe should be used frequently; weeds that are growing amongst the plants should be removed carefully by the hand, for if they are allowed to remain they will soon choke the Onion plants. Dustings of soot applied during showery weather will greatly benefit this crop.

Digging.—Any ground still cropped with winter vegetables should now be cleared without delay and dug, using well-rotted manure if necessary. After digging, tread the ground to consolidate it so that it retains moisture.

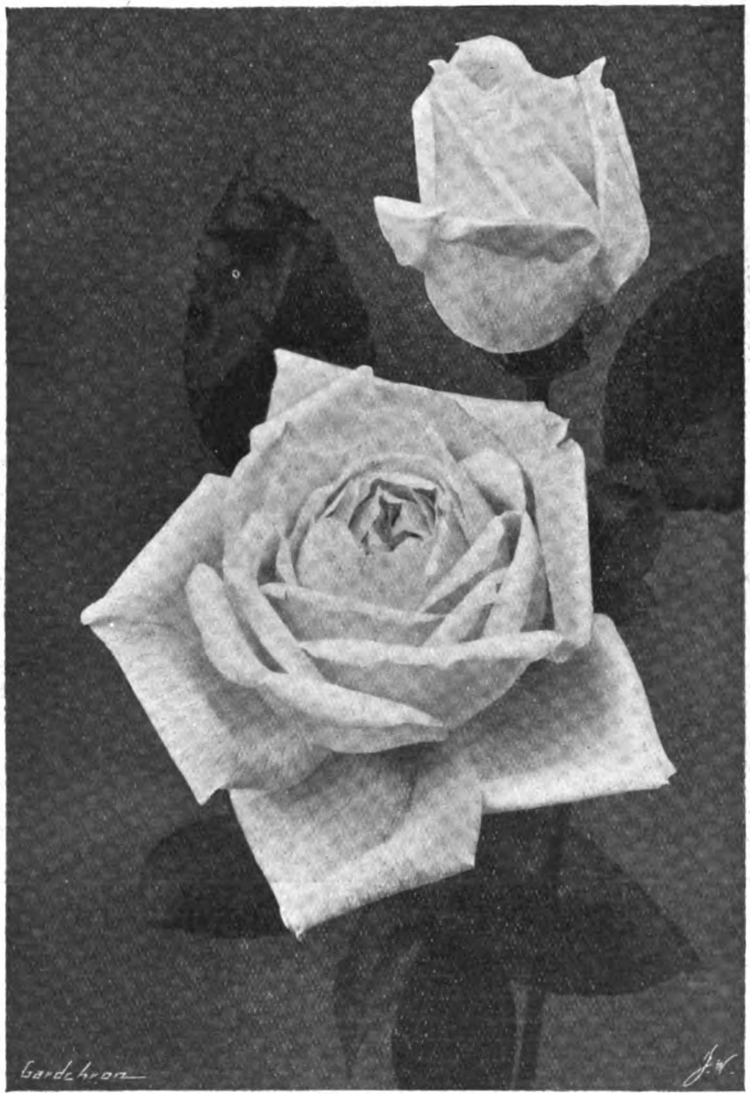

FIG. 141.—ROSE WHITE ENSIGN.
National Rose Society's Certificate of Merit, April 24.

THE ROSE GARDEN.

ROSE WHITE ENSIGN.

White Roses are great favourites with everyone, but, rather curiously, good white varieties are not so plentiful as some other colours, for example pink and red, the most popular white variety being Frau Karl Druschki. Whilst this good Rose possesses many excellent qualities it lacks certain attributes, and notably fragrance. The white Mrs. Herbert Stevens has been planted largely in recent years, and Molly Sharman-Crawford is a good white Tea Rose, but there is still room for a good white Rose possessing the robustness and floriferousness of Frau Karl Druschki and having a pronounced fragrance.

Judging from the blooms of White Ensign (see Fig. 141) shown by Messrs S. McGredy and Son at the spring show of the National Rose Society, this new variety promises to fulfil these requirements. The flower is of perfect shape, as may be seen from the illustration of the bud and the mature bloom, and it has the desirable quality of fragrance, but whether the newcomer meets the requirements of a good garden Rose has yet to be proved, although the raisers state that it is suitable for "garden, bedding, and forcing purposes," qualities which can only be ascertained after the variety has been proved under cultivation.

It belongs to the Hybrid Tea section and suggests a more perfect and more rounded Niphetos, with a fascinating creamy centre. The stems are long and stout and furnished with good foliage, and if the variety is amenable to forcing it should prove useful to those who grow Roses under glass for market purposes.

ROSA FARGESII.

In *The Gardeners' Chronicle* for January 3, 1925, page 8, an unnamed correspondent calls attention to the misleading character of the name Rosa Fargesii, the binomial Latin form of which conveys the impression that this is a species of Rose new to science, when in fact it is merely one of the pink-flowered forms of Rosa Moyesii.

Names of this kind are unquestionably very misleading, and ought not to be given. The compilers of *Standardized Plant Names* found many such names in horticultural literature, and they devised what appears to be an effective method of excluding these names from use in the American horticultural trade. *Standardized Plant Names* makes a clear distinction between the names of natural species and sub-species on the one hand, and horticultural varieties on the other. The technical names of natural species and sub-species are in Latin form. For example, the Scotch Rose, a wild species, is Rosa spinosissima, and the Altai Rose, a wild sub-species, is Rosa spinosissima altaica. The names of horticultural varieties of Rose are in non-Latin form, usually English, French, or German—for example, Radiance, Maman Cochet, and Gruss an Teplitz.

In the application of this principle to the present case this Rose should be given an English name—for example, Fargès Rose.

In the preface of *Standardized Plant Names* occurs the following paragraph relating to this matter:—"For many reasons the Committee prefers the practice of calling horticultural hybrids and other horticultural varieties by distinctive non-Latinized names—like the American Beauty Rose or the Baldwin Apple—in preference to the use of Latinized names (in imitation of those applied by botanists to natural species and sub-species), which attempt to set forth the genealogy of the variety, such as *Prunus cerasus rhexi*, Rhex Cherry; *Chamaecyparis pisifera plumosa argentea*, Silvertip Retinospora; *Nephrolepis exaltata bostoniensis elegantissima compacta cristata*, Cockatoo Boston Fern." *F. V. Coville.*

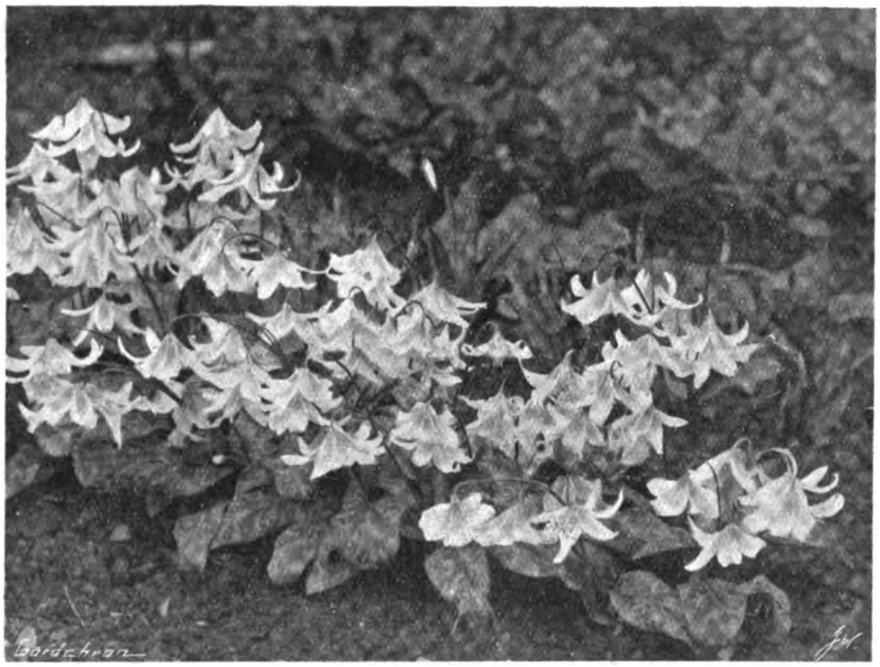

FIG. 142.—ERYTHRONIUM REVOLUTUM VAR. WHITE BEAUTY.

NOTES FROM GLASNEVIN.

THE ERYTHRONIUMS.

Commonly known as Dog's-tooth Violets, the Erythroniums rank among the most beautiful of spring flowers. They bloom profusely during April, and rarely fail to give a good display. Perhaps a dozen species are known to botanists, and most of them are in cultivation, one being European the remainder American. They are tuberous-rooted plants, the tubers clothed with a membranous, brownish coat, and, as a rule, they increase by off-sets. Cultivation presents no great difficulty, but moisture is essential. Cool, moist pockets at the base of the rock-garden are admirable, while the small bogs generally associated with rock-gardens will suit Erythroniums to perfection. One of the prettiest displays at Glasnevin every year is made by the European species E. Dens-canis, in short grass, not far from the rock-garden. There is evidence that the American species would do equally well under similar conditions. One great advantage of growing Erythroniums among short grass is that no bare ground is left when the leaves die down in early summer. In addition to their bright flowers many of the species have beautiful, mottled leaves. As a rule, only two leaves are produced, from between which arises the scape or flower stem.

As in other plants of the Lily family, the flower is composed of six segments, the three inner bearing small crests or auricles in most of the species. The nomenclature of the genus is not very satisfactory, and reliable descriptions are not easy to find.

E. Dens-canis produces handsomely-mottled leaves, shorter and relatively broader than those of the American species; the flowers are solitary on scapes about six-inches high, the colour varying from rosy-purple to pink and almost white.

E. albidum, native of Ontario, Texas, etc. has narrower leaves than is usual in the American species, and by some authorities they are described as unmottled; here, however, they are distinctly mottled. The solitary flowers are carried at about the same height as in the European species; they are bluish-white, and yellow at the base of the segments. They appear in late April.

E. americanum, native of the Eastern States and Canada, has narrow leaves like those of E. albidum, yellowish-green, mottled with brown; the flowers are solitary rich yellow, the segments recurving when the flowers fully open in late April.

E. citrinum, an Oregon species, has mottled leaves; stems one- to three- flowered; flowers pale yellow with orange staining at the base.

E. grandiflorum is one of the species about which there appears to be much confusion. Many of the finest garden Erythroniums, with large, pale yellow to almost white flowers are indiscriminately called grandiflorum or revolutum. The true E. grandiflorum, as described by American botanists and figured in *Rocky Mountain Plants*, has green leaves without a trace of mottling, stems one- to four- or five-flowered, and the flowers rich yellow.

E. grandiflorum var. Nuttallianum is distinguished from the type by having red anthers. Both forms are growing here, but I find it very difficult to distinguish them, and unless they can be easily distinguished in nature I do not think they are worth separating.

E. Hartwegii, a Californian species, has mottled leaves; stems four- to five-flowered; flowers pale yellow, almost white, orange at the base.

E. revolutum, a Western American species, I take to include all the fine forms found in gardens with four- to five-flowered scapes; the flowers are large, with recurved segments and mostly pale yellow, or almost white, with yellow or brown marking at the base. The leaves are mottled, and the scapes at flowering time may reach a foot in height. E. revolutum giganteum is a fine form, usually known as E. grandiflorum giganteum.

E. revolutum albiflorum is equally handsome and robust, with almost white flowers. One of the most beautiful of garden forms, namely, E. White Beauty (Fig. 142), is apparently a selected form of albiflorum, and I entirely agree with *C. H. C.* (p. 317, May 9), that it "is a lovely thing."

E. revolutum Johnsonii, from South Oregon, differs in having flowers varying from deep rose to pink. Another good garden variety, known as Pink Beauty, may be a selection from E. r. Johnsonii. Both these forms are reputed to have been found wild, and as the revolutums appear to vary considerably this is quite possible.

Erythroniums, like Snowdrops, resent being long out of the ground, and succeed best when replanted so soon as the leaves turn yellow. Anyone who contemplates beginning a collection, or adding to any already grown, should place an order now, with a request that delivery of the tubers be made in July. *J. M. Besant.*

NOTES FROM A WELSH GARDEN.

Although the spring is unusually late, and the weather harsh, dry and easterly, many shrubs are carrying a good show of blossom. Erica australis, supreme among the Tree Heaths, has been laden with its large and vivid, rose-crimson bells for several weeks, and some groups of E. mediterranea and E. m. glauca are singularly cheerful, especially where their purple, honey-scented blossoms have some bushes of the double-flowered Gorse as a background.

One remarkable member of the Ericaceae, Pieris formosa, has failed for the first time for many years to produce a full yield of its lovely, white blooms, a sharp November frost and other evil visitations having stripped it of every bud. Even so, this fine bush is now putting forth its new shoots which, being exceedingly glossy and of a fiery coppery-vermilion, go far towards making amends for the lack of blossom.

Arbutus Menziesii is flowering for the first time in this garden, and a very handsome object it makes in the clear sunshine of an April day with its smooth, Cinnamon bark, bright green foliage, and panicles of ivory white. Among smaller fry one must note the simple charm of the little Kalmia glauca, whose rosy-pink cups are so vivid a colour in the bud stage. But even in the humid west this Rocky Mountain shrublet seems to suffer from the parching effect of easterly winds. To some extent the same remark applies to Cassiope tetragona, whose rich green is now dappled with dainty, white flowers. Phyllodoce (Bryanthus) empetriformis, on the other hand, is always reliable and good.

Perhaps the most charming of the Azaleas in bloom at the end of April was A. ledifolium (indica alba), which is quite hardy here. The large, snow-white, deliciously-scented flowers of this species are wonderfully beautiful against the rather dull, green of the ample foliage, but both blossom and bud are, of course, apt to be marred by late frosts. The rosy-lilac, double-flowered variety (narcissiflorum) of the above is always a week or two earlier with us, and its blooms seem better able to resist frost.

Rhododendron punctatum, its rosy-pink trusses standing out clearly against the rich, glossy-green foliage, is a pretty little woodland shrub, and one that never fails to bloom profusely. It is to my mind superior to any of the well-known hybrids of the Wilsonii class, of which it is the parent, yet it is more rarely seen in gardens. R. Grievei must, however, be given precedence over the foregoing, for it has larger flowers in good, firm trusses, and their colour is a peculiarly bright, shell-pink. Among the most charming representatives of this race now in flower in the rock-garden are the lavender-blue R. fastigiata, R. Hinomanyo in satiny-pink, and A. Maxwellii.

Some time ago I referred in my notes to the difficulty of obtaining the true Pulmonaria rubra, the result being that, in a few days a nice plant appeared by post from Mr. F. G. Wood, of Ashstead. Now in full bloom this Lungwort is proving a really pleasing addition to our collection of these old-time plants. It has unspotted leaves, and the flowers, a soft "Liberty" shade suggesting a blend of scarlet and red, remain the same colour from first to last.

Its alpine congener having concluded its spring-flowering, Polygala Vayredae has the field to itself in shrubby Milkworts, and a very choice little plant it is, well worth the additional care and patience it seems to demand in getting it established in a congenial situation. That adorable Anemone, A. nemorosa Allenii, is the last word in refinement of colour and elegance under our deciduous trees—one of the comparatively few front-rank plants that will naturalise and carry on for years without deterioration. Hardly less might be said for our own native Saxifraga granulata, the single-flowered type species which is singularly delightful among the wild Hyacinths and other woodland plants. Oxalis Acetosella rosea, a gem of the first water, also increases abundantly.

That very lovely Primula known as Linda Pope is exceptionally good this spring, always flowering rather later with us than P. marginata. Unlike the latter, to which Linda Pope is closely allied, this old-time variety seems to do best where there is a little shade and not too dry a soil, and the cool, fresh Lavender colour of its large flowers is certainly more attractive out of the sun. Clear yellows are always pleasing in conjunction with bluish-Lavender tints, and vice-versa, hence the peculiar charm of a group of an old and fragrant yellow Primula Auricula associated with a throng of self-sown seedlings of Viola Papilio. Viola gracilis Lady Crisp and Perry's Yellow make an equally happy combination, and the same may be said of the Citron-yellow variety of Alyssum saxatile and Aubrietia Lavender.

If few of the dwarfer Fumitories can claim much distinction as flowering plants, Corydalis Allenii stands out as one of the more distinct, the foliage being handsome, and the creamy-white blossoms are larger than those of most of their kind and streaked with purple. C. capnoides, with ivory and Orange-yellow blooms and a foliage much like that of the well-known C. lutea, is also among the most attractive early ones. Of the many Cruciferous plants adorning the spring rock-garden, Aethionema Warley Rose, presumably an extremely brilliantly-coloured form of Warley Hybrid, is pre-eminent. There is also a biennial Iberis of the greatest charm, whose self-sown seedlings make low, compact masses of bloom in a soft, rosy Lilac. *A. T. Johnson, Ro Wen, Talycafn, N. Wales.*

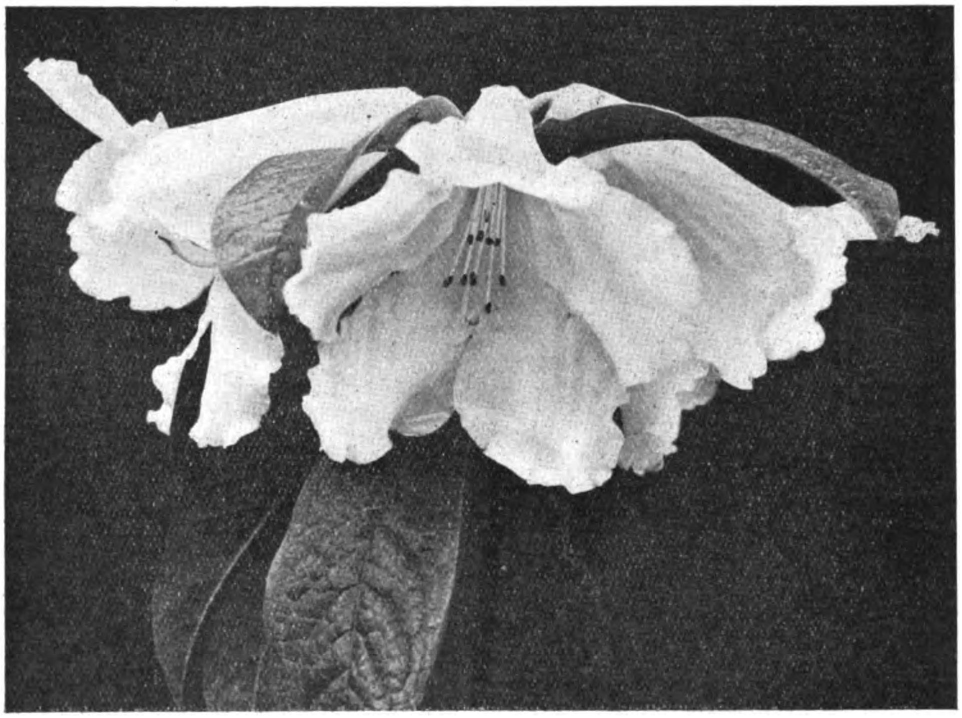

FIG. 143.—RHODODENDRON TYERMANII.

This Rhododendron gained the R.H.S. Award of Merit on May 5 under the incorrect name of R. Teysmannii, but the latter is a Sumatran species with yellow flowers. (see p. 338).

TREES AND SHRUBS.

RHODODENDRONS OF THE LAPPONICUM SERIES.

Continued from page 315.

R. scintillans.—This is another of Forrest's introductions from Western China and links up with the last-mentioned species. It commences to flower when R. orthocladum is about over; it differs in habit as it is straggling, easy to peg down for layers, not nearly so floriferous, and produces four to six small flowers of a rosy purple colour in the inflorescence. The leaves are a little broader and thicker, with the apices decurved; the leaf-undersurface is more amber coloured, due to the vast number of scales. The twigs also are encrusted with scales and become glue-coloured.

R. rupicolum.—This lovely coloured species flowers early in May. The plant is rather loose in habit and lends itself to a position where it could overhang large stones or pieces of rock. The lovely violet-blue flowers enhanced with five golden-brown anthers give pleasure to all who see them. The plant seems to grow slowly and is only eighteen inches or so high. It does not make many growths suitable for propagation purposes, nor have I seen any seeds ripen, but the prospects of obtaining seeds in this country are good.

R. impeditum.—This well-known Rhododendron continues to maintain its reputation as a free-flowering, charming, neat plant, only a few inches high, which extends along the ground more than it rises above it. The flowers are bluish-purple, with more blue than any other species in the group. The flowers are larger, with exerted stamens and appear a week or so later than those of R. intricatum. This plant has also a more upright habit but is intricately twiggy and has flowers of a purple shade.

Appearing amongst R. impeditum are two clear types, one more glaucous or hoary than the other, which has flowers with a smooth style; the other is more glabrous, with style puberulous.

R. oresbium.—This species differs very slightly from the last two, and of the three R. impeditum is the best.

R. hippophaeoides.—This also is a well-known species. It began to flower in the middle of April last year. The colour of the flowers shows much variation when they first open but all seem to fade to a whitish-lavender. The plant grows as well as, if not better, than others of its kind, and makes liberal growths a foot or so long, that eventually become shrubby. The twigs are smooth; the leaves one inch to two inches long, different in texture to any of the afore-mentioned, the under-surface being almost greenish-yellow. The flowers are half-an-inch to three-quarters-of-an-inch across and five to ten are usually produced in the inflorescence; they have a short style and filaments. At times there may be clusters of buds with so many as twenty to thirty flowers, which are developed on short stalks. The variety rosea is a distinct and extreme coloured form. *C. F. C.*

(To be concluded.)

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SOME SPECIES OF TULIP.

I HAVE never yet discovered why it is that the wild species of Tulip are so much less grown than the garden hybrids, of which some are to be found in nearly every garden. I cannot believe that it is merely laziness on the part of gardeners, for a good gardener is always ready to take any amount of trouble to give his plants what they want. Yet the only real difficulty about the successful cultivation of wild Tulips is the advisability of digging up the bulbs every year in June or July and storing them in a dry place until November.

There is, of course, the objection that the wild Tulips are comparatively expensive to purchase, but this is largely due to the fact that no nurseryman in this country, so far as I know, has taken the trouble to get together a collection of the species and to raise stocks from seed. Some species, of course, increase rapidly by offsets, while others rarely, if ever, make any. For instance, of one of the forms of the Greek species, T. Orphanidesii, I obtained originally three bulbs from Holland and I now have more than a thousand, after giving away a good many in the course of years. Even T. Batalinii, T. Maximowiczii, and T. linifolia, the finest and most brilliant of all species for the rock garden, increase steadily by offsets, and yet they are now very seldom seen.

I began with three bulbs of T. Batalinii and three of T. linifolia, and later was given about a dozen collected bulbs of T. Maximowiczii. It is true that I have raised seedlings, but the result of increase by seeds and offsets is that more than a thousand are flowering this year. On the other hand, T. Greigii rarely makes an offset and must be raised laboriously from seeds, and T. Hoogiana and T. Micheliana are equally troublesome. These latter species are perhaps hardly worth the trouble, but there is no Tulip more shapely or more brilliant than a good example of T. Greigii.

Of the species which are easy to grow and which should be in every garden, I should put T. Kaufmanniana first. It is practically the first to flower and its flowers are particularly welcome early in March or even at the end of February. The typical flower, white with a yellow base and broad streaks of scarlet on the backs of the outer petals, is comparatively well known, but among seedlings there is endless variety, for some are backed with bluish-purple and others with pale grey, while some have scarlet blotches on the inner surface and some are wholly yellow. The deepest of these, of a rich golden colour, I have obtained by crossing a yellow form with the scarlet coccinea, a cross which has also given me a variety, which might not inaptly be called Blood Orange. Coccinea is quite distinct from the pinkish-red variety known as Gaiety. It is a deep scarlet and can only be increased by seeds, while Gaiety makes fairly rapid increase by offsets.

After T. Kaufmanniana comes T. praestans, a very peculiar species. The colour is a curious light scarlet that does not seem to occur in any other species; the stems branch and produce two, three, or even four flowers, and the somewhat narrow, oblong leaves have a well-marked mid-rib on their under-surface, which makes it possible to recognise a single leaf of this species. Another peculiarity is that the six petals open out flat in full sun into a star-shaped flower, which, combined with the tall growth of the plant, makes it very striking. Unfortunately, the growth is so rapid, the stems are so numerous and the leaves so thick that the whole plant tends to be top-heavy and needs to be grown in a position where it is sheltered from wind, otherwise it is liable to snap off at the ground level. Deep planting at ten or twelve inches down helps to decrease this risk and should be adopted for this species.

Deep planting may also be good for several other species, such as T. Greigii and T. Kaufmanniana, whose bulbs have a puzzling habit of sending down droppers which form new bulbs several inches below the point at which the original bulb was planted. In deep, rich, well-drained soil, I should certainly advise deep planting, and I should not be surprised to find the bulbs living on from year to year without lifting, especially if the position was such that much of the moisture in the soil was sucked out of it in summer by the roots of neighbouring shrubs. Even in such a position as this it would probably be advisable to lift the bulbs about every third year in order to separate the offsets and give them more room when they were replanted.

T. Greigii should certainly be in every garden, for it is the most shapely of all Tulips. There is a breadth of petal and a graceful curve about the outer three segments which give the flower an air of distinction and breeding which is never seen in any garden hybrid. The typical form is scarlet, but others have red markings on a yellow ground. There is even a rare form in which the ground is white, and in some seedlings the scarlet of the upper part of the flower shades to yellow at the base.

Almost equally fine, and easier to manage because it comes rather late, when the weather is inclined to be less boisterous, is T. Tubergeniana, with four large leaves and huge scarlet flowers, usually with a coal-black base, which is, however, sometimes edged with a narrow outline of yellow. Among some two hundred seedlings only about half-a-dozen have appeared with this yellow edging, and I was inclined to think that they were the result of hybridisation until this year, when, for the first time, I have had in flower some of the scarlet Tulips, which grow in clay or mud on the roofs of houses at Srinagar in Kashmir. Years ago I saw in some book of travel a description of these houses with their scarlet Tulips, and it was not until two years ago that I obtained a few of the bulbs. Last year they disappointed me by sending up two or three leaves each and not flowering, though the production of more than one leaf from a bulb is usually a sure sign of flowers to come. This year, however, they have flowered and are identical with the form of T. Tubergeniana, in which the base is slightly edged with yellow and the colour of the flower a rather lighter scarlet than in the type.

This lightening of the shade of scarlet by a touch of yellow is well seen when looking down a long bed of T. Batalinii, T. linifolia, and T. Maximowiczii and of hybrids between them. The two last have flowers of the most dazzling bright scarlet with a small, black base, while T. Batalinii, which is a colour form of T. Maximowiczii, has pale yellow flowers. Among the hybrids, some are scarlet and some Apricot, and it is only when numbers of flowers are seen together and looked at from a little distance that the shade of scarlet is seen to be distinctly paler than that of the flowers of the species. The difference between T. linifolia and T. Maximowiczii is that when the former consists only of a bud at the ground level, in the centre of a cluster of five or six prostrate leaves, the latter is already in flower with its leaves distributed at intervals up the stem.

Quite distinct from all the species hitherto mentioned are those with slender stems and nodding flowers, which, moreover, always have a tuft of hairs at the base of the filaments which support the anthers. The best known example is perhaps T. sylvestris, which is supposed to be a native of this country. The yellow flowers are produced either singly or in pairs, and, at any rate, in the large, free-flowering Italian form, are very sweetly scented, though I am unwilling to believe that yellow Cottage Tulips owe their fragrance to the influence of this species. There is no known evidence that Tulips from the two main sections of the genus have ever been crossed, and it is certain that many attempts to obtain such a cross have been unsuccessful.

Algeria has a white-flowered relative, T. primulina, which is also sweetly scented, and Greece a whole series of forms with red or terra-cotta flowers, obtainable under the names of T. Orphanidesii and T. Hageri. Western Asia Minor apparently has forms with orange flowers. At any rate, I have flowers of such a colour and believe they come from the neighbourhood of Smyrna, though there is some uncertainty about this. All flower easily, and most of them increase readily by offsets. The one exception is the Cretan T. saxatilis, which increases readily enough, but which is exceedingly difficult to flower unless the bulbs are well fed and very thoroughly ripened in summer, then they produce two or three flowers on a branching stem, of a pale mauve colour with a large yellow base and prominent chocolate anthers. *W. R. Dykes.*

TULIP NOTES.

EARLY FLOWERS IN COOL HOUSES.

I STATED last year that I intended conducting a trial of early-flowering white Tulips under glass. I may not have made it plain that it would have to take place in cool houses where the temperature seldom reaches 55°, and where the conditions are all the better if it never exceeds 50°. The trial has concluded with disastrous results. Only one variety behaved in a respectable manner, and that was Diana, which I am growing for the first time this year. It alone had a desirable stem. Great is Diana of the Early Tulips! My collection of striped earlies shared the same fate as the whites. The purple and white striped Globe de Rigaut and the rose-dashed Arms of Leiden alone did well. The rest were a sulky looking lot. They just showed themselves above the soil and there they remained until they died, "unwept, unhonoured, and unsung."

Now is this the inevitable result of trying to get early-flowering Tulips to flower in our cool greenhouses in the month of February in the same happy looking condition as those we see in the shop windows? With sufficient bottom heat, with a warm temperature, and with the means at hand to darken the growth in its early stages, good flowers, even in January, are a fairly simple proposition. But without these aids, is it possible? I very much doubt it. If anyone knows how it can be done, he would be a benefactor to many small people if he would tell us the way to do it. Anyhow will someone who knows please put us out of our misery?

MENDEL TULIPS.

Those who are more or less behind the scenes in the Tulip world know that a new type of plant has recently made its appearance. As the result of crossing Duc van Thol varieties with Darwins we have this new race to which its originator, Mr. E. H. Krelage, has given the name of Mendel, in the same way that in previous years his firm gave the famous names of Darwin and Rembrandt to other well-known types. Although these were offered by several Dutch firms in a wholesale way in 1924, I did not see any mention of the new comers in any of the British retail lists I received. Doubtless they were waiting to see what would happen. From this it would appear that they are probably very little known in English gardens at the present time. In a few years it will be different if a single trial under glass and in the open is anything to go by.

In one part of the greenhouse there were those miserable early-flowering failures, in another were a few pots of Mendels, which were quite alright, with good tall stems and shapely flowers of various hues. These and the others had had exactly the same treatment from the day they were potted, onwards.

In the open I can also give a satisfactory report. Their period of flowering synchronizes with the later earlies like Prince of Austria, and the earliest Darwins like Fra Angelico. They will be welcome because they will give us new shades of colour in Tulips at the date when they bloom. April Queen, for example, reminds me very much of our old friend Sir Harry. Early Beauty is a delightful soft pale rose with just a suspicion of orange round its edges when the blooms are young. Salmoran is a wonderful soft pale orange-red, ever so much softer and paler than Orange King. Alsace is a carmine, not very unlike our old friend Jefferies.

To sum up, my present opinion is that although they flourish in the open, their special mission will be to provide easily grown bulbs for pot culture, but before this comes within the range of practical politics there will have to be a very big drop in the prices.

EARLY TULIP DE WET.

I am sitting on the gate, but it is a painful job. My allegiance to my old friend, Prince of Austria, as being the great early Tulip is wobbling. De Wet has come upon the scene within twelve or fifteen years. There is no mistake about it, it is very fine. The long, elegant shape and the exquisite fresh-looking, orange colouring of its blooms give this sport an attractiveness and a distinction which compel our homage. "What *is* that, Mr. Jacob?" I tell the enquirer and down goes the name. It is only the odd visitor or two who is already familiar with it that makes no enquiry and writes down no name. Perhaps I ought to state that it is just as good as the old Prince of Austria under glass.

EARLY WHITE VARIETIES OUTSIDE.

My trial of early-flowering white Tulips in the open has turned out just as successful as that under glass was a failure. If White Swan be classed as an early, I had a dozen varieties. First in order of merit I put White Beauty, the pure white sport from Pink Beauty; then Diana (round-shaped bloom), and then Princess (long-shaped bloom). White Swan is too weak in the stem for a higher place than fourth, although judged by its flower alone it is most attractive. Some may prefer its droop before the far stiffer White Beauty. *Joseph Jacob.*

PLANTS NEW OR NOTEWORTHY.

RHODODENDRON SPERABILE.

THE showy Rhododendron sperabile, so well shown by Lionel de Rothschild, Esq., at the recent meeting of the Royal Horticultural Society (Fig. 144), is a beautiful as well as a most interesting species. It was found by the late Mr. Reginald Farrer in North-east Upper Burma, on the Hpimaw Pass, at an altitude of ten thousand feet. It is Farrer's No. 888. According to the late Sir Isaac Bayley Balfour in *Notes from the Royal Botanic Garden, Edinburgh*, Vol. xiii., No. LXV., pp. 297 and 298, Mr. F. Kingdon Ward found a similar plant in Eastern Upper Burma, to which he attached the field ticket: "Forests below Feng-shin-hing Camp, Alt. ten thousand feet. Dwarf procumbent under-shrub on a granitic scree facing South. Flowers scarlet. No. 1689. 20. 6. 14."

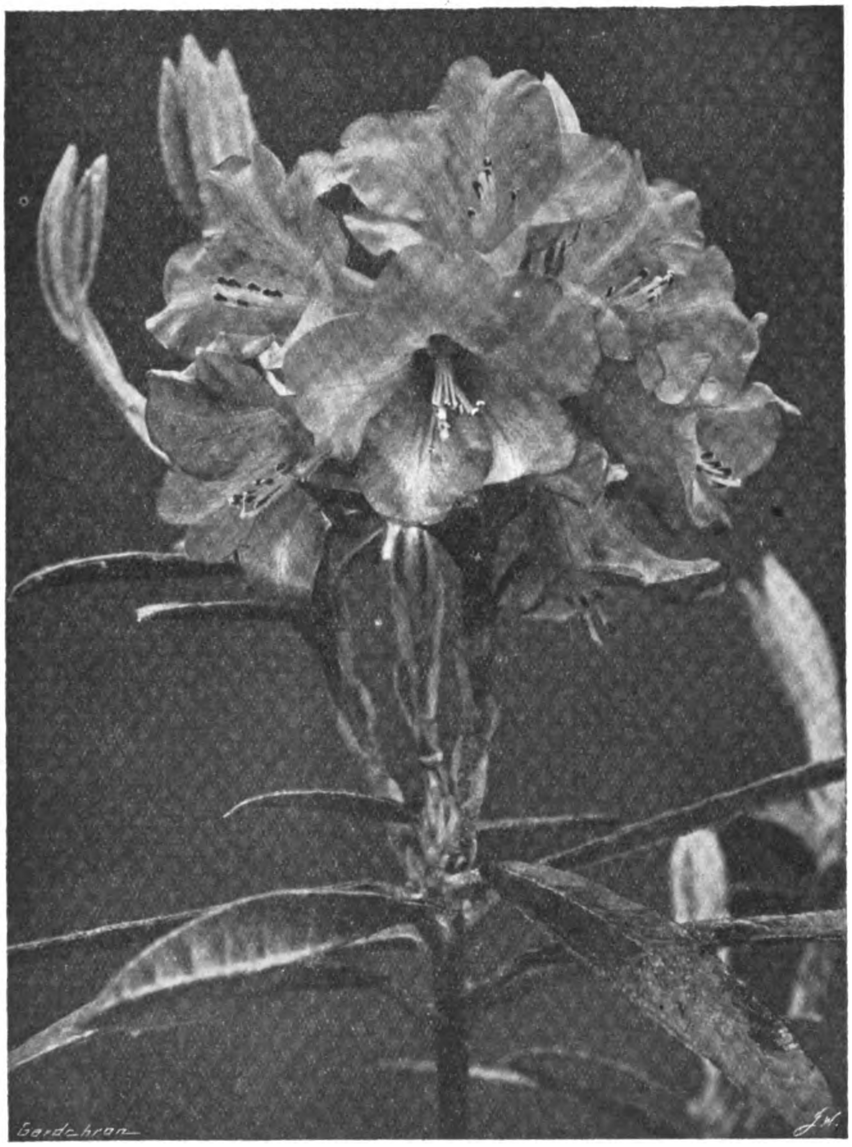

FIG. 144.—RHODODENDRON SPERABILE (FARRER 888).
R.H.S. Award of Merit, May 5.

Mr. Kingdon Ward's material was very slight, and so Balfour hesitated about naming it, and he wrote, "I could only assign it to the vicinity of *Rh. euchroum*. I am disposed to think that Ward's plant of 1914 is this *Rh. sperabile*, of which Mr. Farrer got a splendid series of specimens enabling identification to be made without difficulty. There are some divergencies in character, however, and if I place Ward's No. 1689 in the species it is with the caveat that further investigation is needed to confirm it."

R. sperabile is of the phylum haematodes and a member of the Neriiflorum series.

The clear scarlet flowers are of medium size, and the stiff green leaves have a tawny indumentum which appears to be easily detached, and this may disfigure the upper deep green surface of the lower leaves.

Balfour considered R. sperabile as a near ally of R. euchroum, but a finer plant, the latter having leaves wider in the middle and densely puberulous stamens, whereas in R. sperabile they are glabrous. Balfour's opinion that R. sperabile is one of the finest species found by Farrer, seems likely to be confirmed, and if the plant proves hardy and does not flower so early as to be damaged by frosts, it should become a good garden subject.

RHODODENDRON TYERMANII.

Some similarity in the names of two Rhododendrons, R. Teysmannii and Tyermanii, led to considerable confusion between two otherwise very distinct plants at the fortnightly meeting of the Royal Horticultural Society, at Vincent Square, on May 5 and 6.

The Rhododendron given an Award of merit under the name of R. Teysmannii is not that species, but a hybrid, R. Tyermanii (see Fig. 143), raised by Mr. J. S. Tyerman, a former Curator of the Liverpool Botanic Gardens.

R. Tyermanii is a hybrid between two very beautiful Himalayan species, R. Nuttallii, first introduced from Bhotan in 1859, and R. formosum, a native of the Eastern Himalayas, which has been cultivated in our greenhouses since 1815.

R. Tyermanii is an imposing evergreen variety, forming a wide-spreading shrub; it has the characteristic flaking bark of R. Nuttallii, revealing a bright brown, polished stem. The dark green leaves average seven inches to eight inches long, and are about two-and-a-half inches wide, the underside greyish green. The large, broad-mouthed, campanulate flowers are four inches to five inches across, and two-and-a-half inches to three inches deep. The outside is freely flushed with rose when young, but as the flowers open and age the colour becomes pure white, and there is a liberal suffusion of yellow towards the base of the tube. It is interesting to record that one of the best plants flowering in the Himalayan House at Kew is grafted on R. ponticum.

Mr. Tyerman retired from the position of Curator of the Liverpool Botanic Gardens in 1871. In recording the making of a presentation to the Curator by the citizens of Liverpool, *The Gardeners' Chronicle* in 1872, stated that Mr. Tyerman was going to live at Penlee, Fregoney, Cornwall, so that he might cultivate half-hardy subjects. The obvious inference is that one result of his labours is the subject of this note.

R. Teysmannii, with which R. Tyermanii was confounded, is one of the seven species of East Indian Rhododendrons used by Messrs. James Veitch and Sons in the creation of the beautiful, warm greenhouse Rhododendrons usually termed the Javanico-Malayan Hybrids. It is a native of Sumatra, and the buff or tawny yellow colour of the blooms proved extremely useful to the hybridist. In view of the error made by the Royal Horticultural Society's Floral Committee it may be of interest to state that R. Teysmannii was exhibited in flower, for the first time, before the R.H.S., on March 24, 1885, by Messrs. James Veitch and Sons and received a Certificate in the same year. *A. Osborn.*

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

STREPTOCARPUS.

The Streptocarpus in its many beautiful varieties is generally regarded as being only suitable for the stove; this in spite of the fact that it has been proved to be well adapted for furnishing the conservatory and greenhouse during the spring and summer.

True it is that in their younger stages the plants enjoy, in fact demand, a temperature of 60° to 65°; but this is equally true of many other plants employed for greenhouse decoration. Seeds should be sown during January in a warm, moist house in a temperature of about 60°; the compost for the seed-pan should be light in texture and rich. The tiny seeds should be just covered with a fine dusting of very sandy soil, and the seed pans with a piece of glass, keeping them shaded until germination takes place.

When fit to handle, the seedlings should be pricked off into well-drained pans, using at this stage a light compost, consisting of good, medium loam, leaf-mould, and sand; when large enough, they require to be potted off singly into small pots, using a slightly heavier compost. Water the seedlings carefully until they are well established.

The plants should be grown steadily on in a temperature of 55° to 60°; as the season advances and they increase in size, they should gradually be accustomed to conditions approaching the greenhouse. Towards the end of the summer they should—if well-grown—make a fine display in the greenhouse; during the first season, good flowering plants should be produced in 48-sized pots.

After having done duty in the greenhouse the plants should be returned to, and wintered in, a house having a temperature of 55° to 60°, in a position close to the roof-glass. During the winter the plants should be kept on the dry side, giving them no more water at the roots than is necessary to keep the foliage fresh and healthy.

Early in the New Year the plants should be shaken out and returned to the same-sized pots, affording water very carefully at this season until they have made a quantity of fresh roots.

When well-rooted they should be shifted into six-inch pots, in which size they should be flowered. If accustomed to greenhouse conditions gradually, they should give a fine display in a warm greenhouse during April, May and June.

It may be contended that Streptocarpuses are not annuals, but, as has been indicated, they may be treated successfully as such.

The original garden race of Steptocarpus has been improved out of all knowledge, both as regards size of flower and variety of colours, the latter ranging from pure white, through varying shades of pink, rose, and crimson, to mauve and deep violet-purple.

TORENIA FOURNIERI.

There are several varieties of this beautiful annual, which, although an old garden plant, is by no means so generally cultivated as it deserves to be.

Seeds are best sown in a warm house during February or March, and in their younger stages the plants are best grown in a temperature of 55° to 60°. When fit to handle the seedlings should be pricked off, three or four together, into small sixty-sized pots, and when well rooted they should be transferred to receptacles five inches in diameter. Use a fairly light compost for the final potting.

This annual is usually regarded as requiring intermediate house-treatment, but as the season advances and the plants gain in size they should be gradually accustomed to cooler conditions. When in flower the plants may be grown in an ordinary greenhouse, especially if they are not overdosed with water at the roots. They are subject to attacks of Begonia mite which must be guarded against.

Torenia flava (syn. Baillonii) is another attractive species; it has yellow flowers with dark purplish blotches at the base of the petals, and succeeds under the same treatment recommended for the other species.

It is, however, of a dwarfer, more spreading habit, and although it is pretty as a pot plant, it is probably seen at its best when grown in small hanging baskets, for which purpose its somewhat spreading habit is well adapted. *J. Coutts.*

ORCHID NOTES AND GLEANINGS.

COELOGYNE MOOREANA.

It is noteworthy that Messrs. Sanders, St. Albans, have succeeded in again importing this stately and beautiful species, a small lot of which they originally obtained from Annam, through their collector Micholitz. They received a First-Class Certificate for it at the Royal Horticultural Society on December 11, 1906, the plant being named in honour of Sir F. W. Moore, then keeper of the Botanic Gardens at Glasnevin, Dublin.

C. Mooreana is an ideal decorative plant, being sturdy in growth and producing its arching, graceful sprays of large, pure white flowers, with yellow disc to the lip, very freely, the individual flowers having a resemblance to those of the old favourite, C. cristata, but they are produced on erect stems. In Sir Geo. L. Holford's collection at Westonbirt this species grows and flowers luxuriantly and the finest specimens have been shown by him. Its nearest ally is C. Mossiae, a chance plant sent to the late J. S. Moss, Esq., of Bishops Waltham, from the Neilgherries in 1887. It received the First-Class Certificate of the Royal Horticultural Society and was illustrated in *The Gardeners' Chronicle*, March 31, 1904, p. 401.

The introduction of these and other beautiful and rare species should always be kept in view by importers, for many of the best-known species are not now represented in gardens. *J. O'B.*

HARDY FLOWER BORDER.

THALICTRUM ANEMONOIDES.

This delightful little plant, so well spoken of by *J. F.* on page 272, is, as your correspondent remarks, quite an uncommon plant in gardens. I believe this is largely due, not only to unsuitable soil and situation, as suggested by *J. F.*, but also to the destruction caused by slugs, which appear to be very fond of it, and seem to crop it to the ground on its first appearance in spring.

DIANTHUS ATKINSONII.

Few Pinks equal in brilliancy the scarlet of Dianthus Atkinsonii, a hybrid plant which has been grown for a number of years in gardens. Like its double companion, Napoleon III, it has the great defect of having a most decided tendency to flower itself to death, so that those who wish to retain it will find it desirable to keep a spare plant or two cut dowh to prevent them from flowering so as to obtain plenty of shoots to provide cuttings to strike to maintain the stock of plants.

It is exceedingly difficult to obtain a sufficient supply of cuttings from plants that are allowed to bloom, and with such a good plant as Dianthus Atkinsonii it is desirable to have a considerable number of these, rather than just one or two. But for this habit of flowering itself to death, no difficulty should be experienced with D. Atkinsonii, as it will flourish in any good garden loam, although I prefer soil with a proportion of leaf-mould and a little sand added to the loam.

Of medium height six to twelve inches—this hybrid Pink is a valuable plant in any border and is certain to please by its brilliant beauty and the other attractions of its handsome, single flowers. *S. Arnott.*

SOME SPRING FLOWERS.

Helonias bullata is one of the most beautiful of the North American spring flowering plants. It grows well in a moist, peaty soil and a partially shaded position. From dense rosettes of dark green foliage, arise stout spikes from twelve inches to eighteen inches high, bearing bottle-brush-like heads of rose coloured flowers with conspicuous blue anthers, and the blooms are delightfully fragrant. The plant is perfectly hardy and easily propagated by division.

Other interesting plants now in flower include Anemone nemorosa var. Allenii. This variety is blooming most profusely, and is a vast improvement on the variety Robinsoniana, the flowers being larger and a delightful shade of soft lavender-blue. This Anemone should be planted in large masses in either the rockery, flower border, or partially shaded groves. Adonis amurensis sends up from amidst an abundance of Fern-like foliage a profusion of large, golden yellow flowers in late winter and early spring, as also does the double-flowered form and the well-known species A. vernalis. *W. Logan.*

PLANT NOTES.

ABUTILON VITIFOLIUM.

THE genus Abutilon is well-known, in that it provides our gardens with several shrubby, greenhouse plants of easy culture and high decorative value. It has also given rise to several varieties of hybrid origin which make excellent bedding plants. The object of this note, however, is to draw attention to the comparative hardiness of A. vitifolium. I say comparative hardiness advisedly, as it is not a subject for every soil or position, but, given a well-drained soil and a sheltered position, it succeeds well in the southern counties at any rate, and forms a handsome tree, ten or more feet high.

Its beautiful five or seven lobed leaves, which take on a fine golden hue in autumn make it worth growing, even as a foliage plant alone, but its pendulous, bell-shaped flowers are freely borne in the axils of the leaves and add a charm to the plant from June onwards.

This species was first raised in this country from seeds collected by William Lobb in 1844, plants from which flowered under glass in 1845. It is said that it was brought to Europe still earlier (in 1836) by Captain Cottingham, and grown in his garden in Dublin where it proved quite hardy. *W. Auton.*

PUBLIC PARKS AND GARDENS.

HOLYHEAD URBAN DISTRICT COUNCIL has received permission to borrow £600 for laying out two more tennis courts in the new park.

THE Parks and Cemeteries Sub-Committee of the Stoke-on-Trent Corporation has been requested to inspect land at Bucknall, which it is suggested may be converted into a recreation ground.

THE Urban District Council of Edmonton has made application to the Ministry of Health for sanction to borrow £18,535 for the laying out of the Galliard Road recreation ground, Lower Edmonton.

THE Ministry of Health has received application from the Hendon Urban District Council for sanction to borrow £31,500 for the purchase of land at Cricklewood Lane for a recreation ground.

PRESTON CORPORATION has received the sanction of the Ministry of Health to borrow £3,396 for the construction of hard tennis courts and the formation of paths in the public parks.

MARKET FRUIT GARDEN.

APRIL was a cold and showery month in which vegetation made slow progress. There were several ground frosts, but only once did the thermometer register frost four feet above ground at my place, and then only one degree. There was, however, a keenness in the air on most days, and on several occasions the wind rose to gale force and was cold into the bargain. The land dried at times enough to allow of cultivation and hoeing, but, whilst this did good by moving the soil, very little cleaning was accomplished, because showers soon set the weeds again.

It is a late spring, but a few days earlier than last year. Plum bloom was in evidence throughout the month, but the flowering of Plums was not general until April 22. Early-blooming varieties of Pears and Cherries were fully open on the 19th, but several varieties did not bloom during the month. Strawberries, which came through the winter badly, recovered a good deal, and now look fairly strong. The cuckoo was heard on April 19, one day later than last year.

FATE OF EARLY BLOOM.

Although there was not enough frost in my district to harm the bloom of Plums and certain varieties of Pears and Cherries, the weather was by no means favourable for pollenation, and the result, as shown by the setting of fruit, will be awaited with some anxiety. I took particular note of the Plums, and there was only one day when the bees were numerous enough amongst them to make their welcome hum audible in the plantation; and at that time, it is to be feared, several varieties were getting rather advanced in bloom. There were other days when a few insects were on the bloom; but too often the cold wind and the rain kept them away altogether. Every variety of Plum that I grow is blooming fully this season, Czar, River's Early Prolific and Pond's Seedling being particularly profuse. If only a small percentage of the bloom sets there will be an average crop.

PESTS AND DISEASES.

The March spraying of Plums with nicotine and soft soap seems to have been quite successful in controlling leaf-curling aphis. There is no evidence of these insects at present on the sprayed trees, whilst on two rows of Czar that were not sprayed it does not take long to find a good many. Brown rot is more to be feared unless the weather soon becomes drier.

Apples, except where sprayed in winter with a tar distillate wash, have now been sprayed with derris and soft soap for aphis, suckers, and young caterpillars. The predominating species of aphis this year is the permanent Apple or green aphis, which is unusual with me. Generally the more harmful "rosy" or "blue" aphis (Anuraphis roseus) is the most numerous species. But most varieties are not showing a great deal of aphis of any kind. One lot of Norfolk Beauty is an exception, this having five or six of the green aphides in nearly every cluster of bloom buds. Suckers (Psylla mali) are more plentiful generally than aphides, but are hardly numerous enough to be very serious. Caterpillars are late in hatching, and may yet give trouble, but at present they are not very easily found in my plantations.

The derris and soap spraying has been fairly successful. The wash kills any insects which are actually wetted, but it is almost impossible to reach all where the work has to be done on a large scale. Much more satisfactory is the result of winter spraying with the tar distillate or carbolineum wash. I have been carefully through a plantation so treated and can hardly find an aphis or sucker, though there were plenty of eggs. Here and there a caterpillar has done some damage, but that is all. It is a treat to see the bloom clusters clean, instead of messy by insects, as is usually the case. Some quite young trees, too, which were black with eggs of permanent Apple aphis in autumn, are quite free from the insects. What a pity this wash does not control Apple blossom weevil and scab. Trials indicate that it does prevent brown rot of Plums. If this is confirmed it will mean that we can control the two worst enemies of Plums, leaf-curling aphis and brown rot, with one winter spraying, and caterpillars partially into the bargain.

These tar distillate winter washes are the most important introductions in connection with fruit-growing in recent years. It is surprising that we have not had something of the sort before, for washes that do similar work have long been used in some other countries. In Tasmania, for instance, a "red oil" wash is used in winter to free the trees of scale, aphis eggs, etc., and little beyond scab control is done in summer. The new washes have one drawback which will limit their use in gardens; they burn any vegetable crops that may be grown beneath the trees.

The weather at the time of writing is of just the kind to encourage scab on Apples and Pears. Several observers report the finding of the winter stage on fallen leaves, and there was plenty of it on young shoots of some varieties as well. It can hardly fail to attack the young leaves if conditions remain favourable. Strong measures against scab are particularly desirable in view of the present prospects for Apples. Only clean fruit sells freely when there is much on the market.

BIENNIAL BLOOMING UPSET.

I wish some one could explain why alternate year blooming has been upset in so many cases this season. Nearly every variety of Apple is going to bloom fully. Some lots of Golden Spire and Bramley's Seedling are the only trees remaining true to the irbiennial habit; and even some trees of the latter variety are going to bloom well after a full crop last year. I can only suggest that it is because two wet seasons have allowed the trees to make full use of any plant foods in the soil. That they are well nourished is shown by the growth most varieties have made. During a drought, of course, fruit trees are practically starved, no matter how rich the soil may be. But I have some stunted trees of Lord Grosvenor which have made scarcely any growth for years and which are in the habit of bearing an enormous crop every other year. Last year the fruit had to be thinned severely, and yet they are going to bloom again profusely. Perhaps there has been enough spur growth to enable them to do so, although they are not strong enough to make shoot growth. Whether the fruit is going to set in some of these cases of disturbed biennial blooming remains to be seen.

A valuable contribution to this problem of biennial bearing is made by *W. T.* (p. 303), who says: "Varieties of Apples which are notoriously alternate-year bearers out-of-doors, crop annually in pots under glass under good management, and this seems to me to support the assumption that correct feeding is a first necessity. In pot culture it is within the grower's control; in the open ground it is not." I am very glad to learn this fact about the regular bearing of Apples grown under glass. It will encourage me to persevere with the attempt to correct biennial bearing in the open by means of manuring. By reasoning one could never see how the fault could be due to anything but want of nutrition at some time or other. The fact stated by

W. T. amounts almost to proof of this theory.

Bark Slitting.

When on a visit to fruit farms in the West Midlands last year I saw an orchard of standard Apples in which some of the trees had had the bark slit from the lowest branches down to the ground—a single slit through the bark with a knife, generally on the north side of the stem. The grower had done this because the trees had made no growth for some years, in spite of hard pruning, and looked as though they were "bark-bound." The bark appeared to be constricted and had split of its own accord in places. Good growth followed the treatment. When I got home I tried slitting two half-standards, although it was probably rather late in the season. The slits opened about half-an-inch in the course of the year; and the trees certainly made a little growth, whilst others surrounding them remained stunted. I am now trying the experiment on some more. These trees are of the almost worthless variety Domino, and some of them have refused to move in spite of manuring. It is possibly a rather more dangerous experiment than one would care to try on trees of value, because of the risk of introducing disease; but, as a matter of fact, the slits heal over completely before the end of the season. "Bark-bound" trees provide a subject which needs consideration.

Cross Cultivation.

A great saving of labour is effected where plantations are so arranged that they can be cultivated in two directions. There is a striking contrast in a plantation of half-standard Apples, half of which is interplanted with Gooseberries six feet apart, and the rest with Black Currants only three feet apart in the rows. The former can be cross cultivated, with the result that the area is easily kept clean, the small space round each bush and tree being quickly moved with hoes. Where the Black Currants are, horse cultivation is possible only in the direction of the rows. This leaves long strips to be hoed by hand; and it is much more difficult to keep these strips in a good state of cultivation. Shallow forking in winter or early spring is almost essential. I plant the Black Currants thickly because I find that they crop better so, particularly in situations exposed to the wind. Where the wind can sweep round each bush insects are less numerous on the bloom, unless the weather is calm, and the fruit does not set so well. Another reason for close planting is to allow for the annual grubbing of bushes that show "nettle-head" or "reversion."

Rogueing Black Currants.

The Rogueing of Black Currants to keep down "nettle-head" began at the end of April. It is most easily done when the blossom buds are in an advanced state. If a few of them have actually expanded, so much the better. They must also be quite dry. The normal buds are round and full, and covered with a powdery down (due to short hairs) which gives them a lavender colour. On affected bushes the buds are rather smaller and more pointed, but are chiefly distinguishable by their smooth or shining appearance and reddish colour. The work of detection is a little puzzling at first, but soon becomes fairly easy. In many cases only one branch, or part of a branch, is affected, and in these instances only the branch is cut out and burnt. I do not know whether this saves the bush from ultimate failure, but at any rate it leaves the greater part of it to bear one more sound crop. *Market Grower.*

VEGETABLE GARDEN.

SAVOY CABBAGE.

Brassica oleracea capitata bullata. D.C.

In assigning the true position of the Savoy in the vegetable garden it is safe to describe it as a very useful member of the most useful family of esculent plants known to mankind.

Hardly any one, excepting a very hungry man, would think of describing it as beautiful, yet a close study of the numerous variations of the original form which exist to-day reveals a charm, in spite of an almost painful plainness, that no other green, winter vegetable possesses, while the service that it renders to the food supply of the people at the time of its greatest need, easily and justly accounts for its universal popularity.

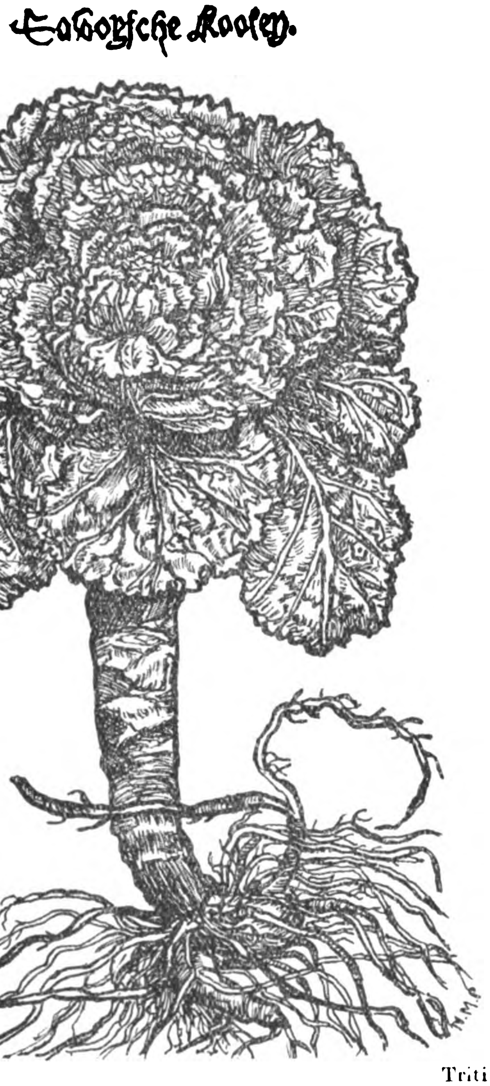
Savoysche Koolen.
H.M.P.

FIG. 145.—SAVOY CABBAGE (Savoysche Koolen).
From the *Herbal* of Dodonaeus, *circa* 1554.

Before entering into the history of this valuable plant, reference may be made to one special characteristic which differentiates the Savoy from all other members of the Brassica family. This is the crimped or crinkled leaf which exists in all the varieties. Regarding this feature we read in Vilmorin's *Vegetable Garden*: "This appearance, according to De Candolle, is owing to the circumstance that in these varieties, the parenchyma, or spongy substance, of the leaf is developed more rapidly than the nerves or veins, and consequently becomes raised above their level, not finding room enough to grow flat in the space between them. The area of the surface of the leaves is increased by these numerous crimped sub-divisions, and the head, being formed of all the leaves while they are still young, is more tender than in any of the smooth-leaved kinds generally. The flavour is also considered milder and less musky. The mode of growing them does not differ from that of the ordinary kinds of Cabbage."

Just where, and when, the crimped pecularity first appeared it is not very easy to state; it remains persistent in spite of the fact that the plant is very amenable to intelligent control.

We in England were so accustomed to associate the Savoy with the mammoth specimens which are sent to our markets during the winter that we did not realise that on the Continent some thirty different varieties had been developed by our continental neighbours, and that as the French and German growers had aimed at the development of earliness and a smaller and handier size, it was possible to obtain Savoys of a very fine quality from early autumn until winter ends.

Approaching the subject from the historical standpoint it is interesting to note that the Savoy is one of the oldest variations of Brassica oleracea, having been mentioned by Pliny during the first century of the Christian era. This is well set out in the following extracts from Dr. Lyte's translation of the *Herbal* of Dodonaeus. In Chapter 6 of Book V., under the heading of "Coleworts, and Cabbage Cole," we read: "There be divers sorts of Coleworts, not much unlike one another, whereof one kinde is of the garden and the other wilde . . . of the garden Coleworts some be white, some be red, and yet of them again be divers kinds. The first kinde of white Coleworts is the common losed or close Cabbage . . . . The second kind of white Coleworts is that which they call Savoy Coleworts. It is very much like the white losed Cabbage, and so it closeth; but nothing so firmly, neither is it so great nor so round as the aforesaid; but it abideth smaller, and in shape longer. This kind of Colewort cannot abide the cold, for most commonly it decayeth as soon as it beginneth to freeze. Nevertheless, the winter being calme, as it was in the yeare of our Redeemer a thousand, five hundred and three score: after winter it bringeth forth his stalke with faire *white* flowers, and afterward his seede in small white Cods like to the other Coleworts. The Garden Coleworts are called in Latine of Plinie Brassica Sativae, and the first kinde of White Coleworts is called in Latine Brassica Tritiana; in English, White Coleworts, losed Cabbage and great round Cabbage Cole. *The Seconde kinde is called of Pline*, in Latine Brassica Lacuturria, in French Chous de Savoye, in low German, Savoy Koolen" (only one variety is mentioned). The accompanying illustration (see Fig. 145) copied from the *Herbal* (1554) gives one the idea of a plant that has taken a long time to develop, and was probably raised from an autumn sowing as set out in the cultural directions which follow: "The best Coleworts are those which are sowen in March and planted again in May, for they will be ready to be eaten in winter. But some kindes, especially the white Cabbage Cole is also sowne in August and planted againe in November and then it loseth or closeth in June, July and August, and after that time it is good to be eaten."

As mentioned above, Dodoens speaks of only one variety and that it was of a somewhat tender nature, from which it is safe to infer that it was developed in a warm climate; the Duchy of Savoy answers this description.

As every schoolboy knows, Savoy, capital Chambery (ancient name Sabaudia), is now the south-east corner of France, it having been ceded with Nizza (Nice) to that country in 1860 as a reward for the help given by Napoleon III to Italy in her struggles to throw off the yoke of Austria, which, mainly by the splendid efforts of Cavour, Victor Emmanuel, and Garibaldi, led to the crowning of Victor Emmanuel as King of United Italy in 1860.

It is somewhat singular that while in 1578 Lyte gives the French name of the plant as *Chous de Savoye*, it is known in France to-day as *Chou de Milan*. When or why the alteration was made deponent knoweth not, but Milan is in Lombardy and not in Savoy. The German name is *Wirsing Savoyerkohl* (Crimped Savoy Cabbage). Here it may be permissible to insert the very brief reference which Miller in the seventh edition of his *Dictionary*, 1759, makes to the Savoy. Under Brassicas, in a list of the varieties of the common Cabbage, he quotes No. 1, B. oleracea Sabauda hyberna. Lob. *Icon.*, The Savoy. (1576),

No. 8, B. oleracea capitata viridis Sabauda. Boerh. *Ind.* II. (1719), The Green Savoy. No description or history is given, but, under cultural directions, he states, "The Savoy Cabbages are planted for winter use as being generally esteemed the better when pinched by frost. They are always much better when planted in an open situation." It will be noted that both the varieties named are credited to Savoy; the yellow variety is not mentioned, although it was well known at that time, and was quoted by Drummond, of Edinburgh, in his *Catalogue* for 1754. Some light on this and kindred subjects will be found if we refer again to the *Herbal* of Dodonaeus, 1618 edition, where there is a Büvoegsel or supplement written by eminent botanists and herbalists after every Capittell, bringing it thoroughly up-to-date. There we read "The Savoysche-Koole is twice mentioned by Lobel (1576), the first mentioned is the Somer-Savoye-Koole, in Latin Brassica patula crispa Sabauda Æstiva: this is more crimpled than the brown-green winter variety, and is looser in the middle. *The other has been gotten by cultivation:* it is more *lanckworpige* (like a Sugar-loaf Cabbage) and is named Winter-Savoye-Koole. In Latin, Brassica Sabauda hiberna." The winter variety mentioned by Lobel was possibly developed in Northern Europe; the description of it would lead one to suppose that it was the forerunner of the excellent Sugar-loaf and Strassburg varieties.

As Lobel's *Icones* was published in 1576, when Dodonaeus was living in Germany, it is reasonable to infer that the fact that a new hardy variety had been developed by cultivation would be brought to his notice and that he passed it on to the horticulturists with whom he was associated. At any rate quite a goodly number of new varieties have originated in that country, of which five are of a yellow colour.

As regards the Savoy in Britain, little appears to have been done with it before the end of the eighteenth century. Mason, in 1793, catalogued simply green Savoy and yellow Savoy; the wholesale dealers did the same, but early in the nineteenth century there appears to have been an advance, for in 1836 Lawson's *Manual* mentions large, Cape or Drumhead Savoy as one of the best for field culture.

Market gardeners found the culture a profitable one, and Dancer of Fulham, and Circuit of Rainham, developed grand strains of the large, late, hardy section. Everyone esteemed the Savoy as an excellent winter vegetable and were contented; but the arrival of the Early Dwarf Ulm variety from Germany set the British growers thinking that large size and hardiness were not the only points to be considered, and skilful growers, with a keen eye for variations of promise, and the knowledge of how best to aid in their development and permanence, got to work, and such varieties as Early Dwarf, Close Curled, Little Pixie, Tom Thumb, and King Koffee were added to the list. In the meantime, France had introduced the St. John's Day, a variety that formed a head more quickly than any other French variety. Earliest of All, of English origin, followed it very closely, but the palm must now be awarded to Germany for *Zwei Monats* (two months), which is easily first.

Further additions have now been made to the large, late section of which the following are a few of the most noteworthy: Victoria, Latest of All, New Year, and Ormskirk, of English origin. Aubervilliers and its parent Vertus, French; Ironhead, German, and Norwegian the latest and hardiest of all. Some people affirm that it is a hybrid on account of the smoothness of its leaves, which in the winter become deeply tinged with violet-purple. Germany is the only country to take the yellow varieties seriously, which is a great pity; they mature very quickly, and are far superior in flavour to any green variety. *S. B. Dicks.*

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Enemies of the Cineraria.—Supplementary to my notes on Cinerarias on p. 314, I may state that the principal enemies of the plant are mildew and aphis, both of which are easily kept in check if taken in time. Mildew is more common in some seasons than in others; generally it appears during July and August and is often caused by insufficient ventilation or overcrowding. Naturally weak growth invites attack, whereas robust and vigorous growth is resistant to it. On the first appearance of mildew dust the foliage and soil with sulphur and withhold overhead waterings until a cure has been effected. Aphis may be easily controlled by fumigation, but for this operation the foliage should be quite dry. Where only occasional plants are affected the pest may be destroyed by dusting with tobacco powder after the foliage has been syringed, washing it off again the following day. *W. Auton.*

Twin Peach and Nectarine Fruits.—I have recently completed the thinning of fruits in a cold Peach-house containing about twenty trees of different varieties, and have been much interested to notice that nearly every variety of both Peach and Nectarine show a fairly large proportion of twin and triple fruits. This is caused by the individual flowers producing two or more pistils, which, when fertilized, result in these irregular specimens, which cannot possibly develop into perfect fruits, and I am anxious to discover what may be the cause of this abnormality. Growing in the same house is a tree of Kirke's Seedling Plum, which for a number of years past has also set a large number of these malformed fruits, some double, some treble, and even some quadruple, but which all drop off when quite small, leaving comparatively little hand-thinning to be performed. I drew the attention of an eminent firm of fruit-specialists to this abnormality some years ago, when they stated it was something quite new to them, and about a week or ten days later they wrote stating that they had now examined a number of their own trees of of Kirke's Seedling Plum, and discovered they were all acting similarly to mine. Perhaps, through some omission on my part I failed to get a satisfactory explanation, therefore, I should be much obliged if any of your readers, having experienced this form of trouble, can give any reason for it, and what, of course, is all-important, also a "cure" for what can scarcely be termed a "disease," which may eventually lead to a great loss in our fruit-crops. *A. T. Harrison, Culzean Castle Gardens.*

Lilium Hansonii.—In the valuable note by Mr. Arnold on Lilium Hansonii on page 297 your correspondent mentions two points which I may be allowed to emphasise. Both refer to the same question—that of protection from spring frosts. Mr. Arnold wisely recommends planting this Lily among other plants or low-growing shrubs, and also that a half-shaded position should be selected for it. L. Hansonii makes growth very early and several times I have had my expectations of its flowering frustrated by spring frosts, especially with plants in a position where they received the early morning sun, one to be avoided with flowers subject to injury by spring frosts. On one occasion I remember a fine clump with an abundance of buds being severely injured by a late frost of exceptional severity. The greater number of the growths of all the outer plants of the clump had their foliage shrivelled and the plants greatly weakened, while not a flower opened on the clump. In other seasons these late frosts destroyed the flower-buds, greatly, of course, to my disappointment, as I have always looked forward with pleasure to the flowering of this beautiful early Lily. Mr. Arnold's experience in all respects would appear to be similar to mine, but I trust he has had less trouble from late spring frosts than has fallen to my lot. *S. Arnott.*

Seeding of Narcissus Pseudo-Narcissus.—In reference to Mr. Harrison's remarks (p. 303) on Narcissus Pseudo-Narcissus being a shy seed-bearer, I examined a small colony of the plants in an old orchard here, and found seed capsules in various stages of development, and the formation of the group suggests self-seeding as the means of increase. I enclose a flower (rather faded), some leaves, and capsules; these are typical of the whole. I cannot understand how Mr. Harrison has millions, if they are not self-sown seedlings. Possibly the large numbers have impoverished the land, which renders the flowers sterile. *J. E., Felcourt Gardens, East Grinstead.*

Trees Killed by Starlings.—Twice of late my attention has been directed to injury caused to young trees by the fouling of large flocks of starlings. In one of these cases, which occurred in a park in Kent, several Oak, Ash, and Birch of about twenty years growth, growing beside tall Elm trees in which the birds regularly roosted, were killed outright, others being rendered unhealthy owing to the same cause. The matter is becoming a serious one, owing to the greatly increased numbers in which the birds have appeared of late. By burning sulphur beneath the trees after dark it was thought that the birds would migrate, but not so, as they gradually returned to the old quarters. Not only have the trees suffered but undergrowing vegetation has been completely killed out, and the whole wood is so polluted that entering it is by no means desirable, as one can hardly keep to their feet in the slippery foulings. The gamekeeper on a large estate in Hertfordshire whom I consulted tells me that he has tried the sulphur and similar methods of getting rid of the starlings but without success, and finds that only by repeatedly frightening the birds by shooting has he been successful in getting them to abandon their old quarters. Probably someone with more experience with these birds can suggest a further remedy, as it is not always convenient to make use of the gun. *A. D. Webster.*

SOCIETIES.

FÉDÉRATION HORTICOLE PROFESSIONNELLE INTERNATIONALE.

(*Concluded from p.* 327).

AFTER the reception at The Hague during the previous evening and the consequent late return of many delegates to Zandvoort, the members of the Conference were not present in full numbers at the opening of the second session at Groenendaal Park, at nine a.m., on Friday, April 24. Mr. Ruys commenced business about ten minutes after time, and it was interesting to observe that the British delegation was the best represented at that hour. M. Lucien Levavasseur was asked to assist the President in interpreting various matters arising.

Mr. G. W. Leak referred to the subject of international arbitration, and presented a proposal to the effect that in the event of a dispute between traders representing two nations, that the panel of each such nation appoint arbitrators from among their traders cognizant with the matters under dispute and that only in the event of such arbitrators failing to arrange an agreement should the international arbitration committee be asked to act as umpire. At the request of the President this matter was left for consideration later in the day, but the opportunity did not come.

On behalf of the British delegates, Mr. Monro proposed "that as Great Britain does not place a tariff on imported cut flowers, therefore it requests that other countries do not impose a tariff upon exports of British cut flowers." This was seconded by M. Chas. Pynaert, and after a few observations by M. Turbat it was adopted without dissent. In previous years the British representatives have registered a protest on these lines, but this was the first occasion on which a definite proposal has been put forward. Considering the large international support it received it would appear that our French friends can hardly allow a definite resolution to pass as a pious protest. The passing of this resolution, however, raised the general question of tariffs, and although Mr. Monro urged that the discussion be confined to cut flowers, the congress thought otherwise. Mr. Bintner (Luxembourg) made a vigorous protest against any tax on horticultural products by any country. He pointed out that in most cases these taxes were imposed at the request of certain horticultural organisations whose members desired protection for their particular branch of the industry. This, naturally, raised a corresponding protesting tax by the country affected by the first imposition. Mr. Bintner urged the appointment of an international committee composed of one florist and one nurseryman for each country for the purpose of considering the general question of tariffs.

When the tariff question was introduced, the President stated that M. Réne Barbier had made a close study of tariffs as affecting the horticultural trade, but his report on the matter was not quite ready. It was agreed that M. Barbier should continue to study the question and report later so that the subject could be briefly and effectually discussed next year. Mr. Oldham observed that Great Britain was a free trade country, and, therefore, the British delegates would not enter the general discussion. This let loose a very babel of tongues, and while the British delegates admired the flow of language and the eloquent expressions accompanying it, they felt a good deal of valuable time was being wasted. M. Levavasseur proposed that "The Conference admits the principle of free trade between each country, but if duties are necessary and imposed, it advocates that those duties be as low as possible." The French delegates again pointed out that the French duty on imported flowers was not a tax against Great Britain but chiefly against Italy. Mr. Van Orshoven, Mr. Jac Smits, M. Turbat, M. L. Levavasseur, Mr. Bintner, and many others joined in the discussion of the French resolution. The resolution was carried, but the British section did not vote on it.

The international committee appointed to consider the points raised and to report thereon to the next Conference consists of Mr. W. R. Oldham and Mr. G. W. Leak; M. J. van Geedereen and Mr. J. C. Mensing, Holland; M. Chas. Pynaert and M. J. Timmerman, Belgium; M. M. Graindorge and M. Levavasseur, France; Mr. J. Bintner, Luxembourg; and Messrs. Scheletiz and Poenicke, Germany.

It was quite natural that from the general consideration the discussion should pass on to the particular. And there is only one "particular" in this case, i.e., the American Quarantine Order. M. Chas. Pynaert opened with a report on the situation as it occurs at present—a gloomy one from the point of view of the European horticultural trade. He considered it desirable to appoint a delegation to proceed to America to discuss the Quarantine regulations with Dr. Marlott. This idea did not find general favour, the opinion being that Dr. Marlott was entirely prejudged in favour of the scheme put forward by the American Federal Board. Mr. Jac. Smits and others urged that every possible step should be taken to get the Quarantine Order repealed or its effect reduced. When M. Pynaert suggested a propaganda campaign in the United States in favour of free trade for horticultural produce, the President invited the American visitors to express their opinion of the Order. Mrs. F. King, President of the Ladies' Garden Club of America, stated that the members of her Association were utterly opposed to the prohibitional effect of the Quarantine Order, and she expressed the view of no fewer than 6,000 women amateur gardeners. In her opinion a delegation to Washington would be useless; what was wanted was a sympathetic head of the department at Washington. Mr. A. de la Mare (*Florists' Exchange*) expressed a similar view, and both he and Mrs. King were heartily thanked for their observations, and Mr. Pynaert and Dr. Wery were also thanked for their efforts on behalf of free trade with America.

Mr. Lobjoit then addressed the assembly, and observed that the American point of view should not be overlooked. The Federal Board was faced with the danger of many kinds of pests and diseases arriving with imported horticultural produce. There were two methods of procedure: the open door subject to suitable tests and the closed door subject to permits. They have closed the door subject to permit, and this method has been endorsed by our Dominions in the southern seas. At present the only way out of the impasse appeared to be a phytopathological service so efficiently conducted that its certificate would be accepted by America. He considered that unless the nursery trade of each country took steps to ensure thorough cleanliness of its produce, nations would close their doors against nations, and the interchange of plants and flowers would cease.

Mr. Leak managed to get a resolution passed to the effect "that the Conference of the F.H.P.I. held at Haarlem, requests the American Ministry for Agriculture at Washington to continue to grant permits for the imports of European bulbs as in the past three years." Mr. Monro suggested that the various representatives should urge their respective governments to immediately set up an efficient pathological service and report again at the next conference. Mr. Galt's address on this subject could not be delivered owing to lack of time, for the conference which promised to conclude with a modest second session, continued late into a third sitting.

In 1926 the conference will be held in Paris at a date to be fixed later, when the date of the Paris show has been settled. Monsieur F. Rabier was appointed president for the ensuing year and Mr. Stahel as vice-president, so the conference of 1927 may be held in Switzerland.

The President thanked Mr. Krelage for the arrangements he had made for the conference, and thanked the various associations which had extended hospitality and made the visit a pleasure to the foreign delegates. A very hearty vote of thanks to Mr. Ruys was given with much applause.

ORCHID CLUB.

THE second annual meeting of the Orchid Club, held at Manchester on the 8th inst., was the occasion of an interesting display of Odontoglossums, Odontiodas, Miltonias, and various species of Orchids.

PREMIER DIPLOMAS.

Odontoglossum Tyntesfield (*parentage unknown*).—A large, round flower of excellent quality, four-and-a-half inches across the petals, which are two inches deep. The sepals and petals are flat, overlapped, white, with a lilac rose blotch on the inner halves; the lip is very large with two lilac rose blotches below the yellow crest.

O. Cramore (*Odm. St. James* × *Odm. Mars*).—A beautiful flower three-and-three-quarter inches across the petals, which are one-and-three-quarter inch deep. The segments overlap, giving the flower a round form. The sepals and petals have a large, solid crimson blotch with a broad, white fimbriated edge. The large, oblong, flat lip presents a large crimson blotch and has a broad, white fimbriated edge.

O. crispum The Bride.—A lovely white hybrid crispum three-and-a-half inches across the petals and of excellent shape. The sepals and petals are pure white, and the lip white with a golden yellow flush beneath the crest. All these were shown by Dr. CRAVEN MOORE.

A Certificate of Cultural Commendation was awarded to Mr. W. A. STEWART, for Miltonia Bleuana rosea.

GROUPS.

Dr. CRAVEN MOORE (gr. Mr. Gilden), staged a magnificent group of Odontoglossums and Odontiodas combined with heavily flowered plants of the yellow Dendrobium Thwaitesiae Veitch's var. which, together with bright red Odontiodas and the full spikes of white crispums formed a lovely combination of colour. Among the Odontoglossums, in addition to those which obtained the Premier Diploma, were many fine and promising seedlings.

B. J. BECKTON, Esq. (gr. Mr. W. A. Stewart), staged a group of Miltonia Bleuana varieties, conspicuous among which was the lovely Bleuana rosea Daisy Bank var. Other plants of interest were Angraecum Sanderianum, A. Leonis, the Jamaican Broughtonia sanguinea, and Hexadesmia crurigera, a plant from Costa Rica bearing some fifty odd, sweetly scented, Snowdrop-like flowers.

A. T. CUSSONS, Esq. (gr. Mr. F. Cookson), staged an interesting group containing a beautiful plant of Angraecum sesquipedale, several plants of Oncidium Marshallianum, Cypripedium glaucophyllum, and Eulophia Saundersianum, among many other species.

At the annual meeting, sympathetic reference was made to the loss which the Club had sustained by the deaths of Mr. J. H. Walker, the first Hon. Treasurer, and Dr. R. N. Hartley, an active member of the Committee.

Eight new members have been elected during the session. The following were elected members of the Committee for the session 1925-26, Messrs. A. T. Cussons, J. Jackson, W. Morton Jackson and F. T. Paul.

The Hon. Secretary read letters of appreciation of the excellent work which the Club was doing for the advancement of interest in Orchid culture from The President, Sir George Holford, K.C.V.O., and others.

NATIONAL AURICULA SOCIETY.

Stepping out of the rain-laden atmosphere of the Manchester Market Place into the upper room of the Coal Exchange, there was to be seen on tables ready for the judges a delightful array of blooming plants of Auriculas and Polyanthuses, all set out in the order of their respective classes which had been duly called out by the Secretary, J. Tonge, 7, Chapel Walks, and quickly responded to by the exhibitors—a solemn function—the occasion being the exhibition of the National Auricula Society on May 9.

The characteristic feature of this the fifty-third show, was the strength of the classes for gold-laced Polyanthus; show Auriculas were few in number, especially the edged varieties, but it was pleasant to see time honoured favourites in examples of Trail's Beauty, George Lightbody, Shirley Hibberd, the bright greens of Orient and Ossian reminiscent of Rev. F. D. Horner and Ben Simonite; Acme and George Rudd were in evidence, and we saw the white-edged Letitia, not fully expanded, while Heather Bell seemed to be missing.

Amongst the selfs there were Harrison Weir, Mrs. Potts, Mikado and Bennett Poë. To see these old stagers, with names that recall glories of the past and many happy recollections was like tasting again the wine of life when the quiet and sedate pleasures of floriculture engaged the attention of famous men and bound them in brotherhood.

The section devoted to Alpine varieties was well filled and numerous seedlings were on view; the varied shades of brown on yellow grounds predominated. Doris was the best of the seedlings, with Brilliance a good second; both obtained Certificates of Merit. In the light-centred class, with shades of purple, Bacchus was noteworthy; a dark velvety mauve bloom of Moonlight was charming as to colour, but the set of the anthers in its tube did not seem to please the judges. With so many excellent types of seedlings in evidence the standard of perfection is necessarily a very high one. Argyle, in dark Plum shades, was an attractive specimen, much brighter than its progenitor Argus. Dr. Pegge was the premier alpine. The chintz effect of these shaded alpines, with their soft, satiny tints and delicate perfume, made a direct appeal to flower lovers.

If one bewailed the scarcity of the green-edged and grey-edged flowers, and the want of diversity of the selfs, there were plenty of seedlings of the shaded alpines to be seen, and these gave promise of future merit.

The attention of raisers might be directed to the aim of separating the reds from the blues in the purple and mauve shades and intensifying the colour; the form they have already. In seedling raising, shape or form persists more than colour. The vigour of some of the seedlings and the size of the pips leave nothing to be desired, and in these days, when the fragrance of cultivated flowers seems to be evanescent, it is good to record the delicate scents of these jewels of floriculture.

The absence of bright sunshine which has been the feature of this season's weather is, no doubt, responsible for the rarity of the blooms of the edged varieties of Show Auriculas, even at so late a date as the ninth May. The Alpine varieties would seem to respond more readily to the dull light that has prevailed, and they have yielded their trusses of bloom at or near the accustomed time.

Turning to the brave show made by the gold-laced Polyanthus, a gleam of sunlight lit up the group and caused some of the pips to sparkle like gems of the first water. Of the dark grounds, Blink Bonny, an old timer, was the best, and Black Bess, a new seedling, obtained a certificate. In the red-ground class Valour obtained a medal as a very fine seedling in red, correctly laced with gold. Mrs. Brownhill was also a good specimen.

In a group put up by Mr. Mottershead, of Crewe, were two specimen seedlings of gold-laced Polyanthus—Diana and C. W. Neeham, both of which obtained Certificates of Merit.

Mr. C. Faulkner showed a charming and diverse group of various types of Primulas illustrating the wide range of colouring these flowers give. Mr. K. Thompson, of Hale, won the cup for Auriculas and the cup for Alpines, on points. Mr. W. Grindron, of Rochdale, was the winner of the cup for Gold-laced Polyanthuses.

Every encouragement is given by the society to amateurs, together with the printed advice and instructions. *C. W. N.*

Obituary.

Richard Pinches.—It is with very great regret we learn of the death of Mr. Richard Pinches, who passed away on Saturday, May 9. Mr. Pinches was sixty-five years of age, and had been ill since last Christmas, suffering, unfortunately, from an incurable disease. He was well known throughout the metropolitan district by reason of his association with many of the floricultural societies. Formerly he took a considerable interest in the Horticultural Club and in the proceedings of the National Chrysanthemum Society, and more recently had devoted a great deal of time to the work of the British Carnation Society and the Horticultural Trades' Association. His business was that of wire-worker and manufacturer of labels, notably the Acme labels, and in the conduct of this business he succeeded his father, Mr. John Pinches, at Crown Buildings, Camberwell. He was extremely popular among all horticulturists who made his acquaintance, and his death will be greatly deplored. We offer our deepest sympathy to his son, Mr. Tristan Pinches, and his daughter, Miss Phyllis Pinches.

TRADE NOTES.

A sale of growing bulbs held last week at Spalding, in the Fen Country, attracted a goodly company of buyers. The bulbs, which came under the hammer, were the property of Mr. Councillor E. H. Gooch, the sale taking place at Clay Lake Bank. The highest price realised was £175, paid by Messrs. J. T. White and Son for a plot of Narcissus ornatus, the approximate number of bulbs being 88,920; while Mr. Dearnley gave £170 for about 70,680 Golden Spur. Mr. O. W. D'Alcorn bought 21,650 Glory of Lisse for £100. Messrs. J. T. White and Son gave prices of £65, £37, and £30 for plots of Pheasant Eye, Double White, and ornatus. Tulips in a general way made fair prices. £12 10s. being given for 7,980 Inglescombe Yellow, £4 15s. for 4,800 Clara Butt, £6 10s. for 4,800 Cramoisie Brilliant, and £7 10s.. for the same number of White Swan. For 5,370 Keizerskroon £10 was given, and £14 15s. was realised for 4,800 William Copland. Perhaps the best price was £17 for 4,800 Princess Elizabeth.

We understand that the beautiful Narcissus Solomon, exhibited by Mr. F. Herbert Chapman at the recent meeting of the Royal Horticultural Society, is not a Poetaz variety, as suggested in our report on p. 326. It is almost a pure bred Poeticus on both sides, but much larger and with a more strongly coloured rim than any Poeticus variety yet seen. We understand that Mr. Chapman has sold the entire stock of the variety.

ANSWERS TO CORRESPONDENTS.

Beech Bark Diseased: *A. J.* The Beech bark sent for examination is full of fungus. We have seen similar bark on trees that are suffering from root trouble and from injury to trunk and branches. The wood below such bark is usually dead, and trees so affected rarely recover. The trees sometimes keep alive for several years owing to a strip of wood and bark remaining alive; gradually, however, the fungus kills this living wood and there is a sudden collapse when the trees are in full leaf. All that can be done is to remove the dead bark, paint the wood with a twenty per cent. solution of carbolic, and follow with a dressing of tar.

Box Tree Bark Damaged: *W. R. B.* The source of the injury to your Box tree bark is not known, although the injury may be due to a beetle. If you could keep a close watch upon the injured trees it might be possible to catch the insect, or whatever is responsible for the injury, at work. If you could send us an example of whatever is gnawing the bark we should be pleased to have it identified for you.

Kew Students' Emoluments: *L. G. A.* A young student gardener at Kew is paid 25s. (basic rate) per week, and the bonus at present is 20s., making 45s. per week. Saturday afternoon duty, which usually comes every third week, is paid for as overtime at 1s. 4d. per hour. Sunday full day duty is paid at the rate of 1s. 7d. per hour, and usually occurs every third or fourth week. It is not necesary to purchase text books for the lectures. Exercise books for note-taking at the lectures are provided free. Lodgings, etc., usually cost about 30s. per week.

Names of Plants. *C. H. G.:* 1, Berberis Darwinii; 2, Lonicera alpigena; 3, Buddleia Lindleyana; 4, send in flower; 5, Spiraea van Houttei; 6, too withered to identify. *E. F.* Berberis aristata; 1, Veronica buxifolia; 2, V. buxifolia var.; 3, V. anomala; 4, V. elliptica: *J. G. L.* 1, Narcissus bicolor Grandis; 2, N. Mme. de Graaff; 3, Tulip Prince of Austria; 4, T. Crimson King; 5, T. Cramoise Brilliant; 6, T. Thos. Moore:

Roses and Pansies: *G. A. G.* Considering that your soil is a very poor and chalky one, it would be undesirable to plant Pansies or Violas underneath the Roses unless the ground is exceptionally well manured and frequently fertilised. So far as we are able to judge however, nothing should be allowed to compete with the Roses and Lilies.

Transplanting Hollies: *T. E.* Hollies may be transplanted as readily in autumn as in the spring, the exact time depending on the weather and the condition of the ground. A safe guide is to move them so soon as the current season's growth is sufficiently ripened to prick the hand when gently squeezed, provided also that the ground is not too dry. After planting, see that they are securely fastened from movement by high winds and a good soaking of water may also be given with advantage. Planting operations should be done as quickly as possible, so that the plants are out of the ground no longer than is necessary.

Communications Received.—J. T.—D. C.—R. M. Ltd.,—C. W. A.—A. G.—SB. D.—W. A.—A. O.—R. L. H.—J. B.—A. B.—J. E.—A. B. R.—G. R.

MARKETS.

COVENT GARDEN, Tuesday, May 12th, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray,	
—12's, 15's	5 0– 7 0
Cinerarias, doz.	15 0–24 0
Crotons, per doz.	30 0–45 0
Cyrtomium	10 0–15 0
Erica melanthera, 48's per doz.	21 0–30 0
— —60's, per doz.	8 0–10 0
Marguerites, white, 48's per doz.	15 0–18 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun.	12 0–15 0
Asparagus, plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays	1 6– 2 6
short ,,	0 9– 1 3
—Sprengeri, per bun.	
long sprays	1 6– 2 0
med. ,,	1 0– 1 6
short ,,	0 4– 1 0
Bouvardia, white, per doz. bun.	9 0–12 0
Carnations, per doz. blooms	3 0– 4 6
Croton leaves, var., doz. leaves	0 9– 2 6
Daffodils—	
—Barril, per doz.	5 0– 6 0
—Emperor, per doz. bun.	4 0– 6 0
Fern, French, per doz. bun.	0 9– 1 3
Galax, American, green and bronze, per doz. bun.	— 3 0
Gladiolus, Blushing Bride, per doz. bun.	18 0–24 0
— White, per doz. bun.	24 0–30 0
—Peach Blossom, per doz. bun.	24 0–30 0
Gypsophila, white, doz. bun.	5 0– 6 0
Ixia, red, doz. bun.	3 0– 5 0
—Mixed, doz. bun.	3 0– 4 0
Lilac, Dutch, per spikes	4 0– 8 0
Lilium speciosum rubrum, long, per doz. blooms	4 0– 5 0
—short ,, ,,	3 0– 4 0
Lilium longiflorum long, per doz.	4 0– 5 0
Lily-of-the-Valley, per doz. bun.	24 0–36 0
Narcissus—	
—Double White, per doz. bun.	12 0–15 0
—Poeticus, per doz. bun.	3 6– 4 6
Nigella Blue, per doz. bun.	12 0–15 0
Orchids, per doz.	
—Cattleyas	24 0–36 0
—Cypripediums	5 0– 7 0
Richardias (Arums) per doz.	5 0– 6 0
Roses, per doz. blooms, Richmond	3 0– 5 0
—Liberty	3 0– 5 0
—Madame Butterfly	3 0– 5 0
—Mme. Abel Chatenay	3 0– 4 0
—Melody	3 0– 4 0
—Molly Sharman Crawford	3 6– 4 6
—Niphetos	2 6– 3 6
—Ophelia	4 0– 5 0
—Sunburst	4 0– 5 0
Gardenias, per box, 12's, 18's	4 0– 6 0
Ruscus, French, per bun.	1 0– 2 0
Smilax, per doz. trails	3 0– 3 6
Spanish Iris, per doz. bun.—	
—Blue	18 0–30 0
—Mauve	18 0–24 0
—White	24 0–36 0
—Yellow	24 0–36 0
Statice, mauve	5 0– 6 0
Stephanotis, per 72 pips	3 6– 4 0
Stock, English white	9 0–18 0
Sweet Peas, per doz. bun.	9 0–18 0
Tulips, per bunch—	
—Haarlem	1 3– 1 6
—Clara Butt	1 0– 2 0
—Wm. Copland	1 0– 2 0
—Farncombe Sanders	1 3– 1 6
—White Swan	1 0– 1 6
Violas, per doz. bun.	1 0– 1 6
French Flowers—	
Anemone, St. Brigid	2 6– 5 0
Marguerite, yellow, per pad	6 0– 7 0
Marigolds, per pad	5 0– 6 0
Stock, double white, per pad 24 bunches	10 0–12 0
—double coloured	10 0–12 0

REMARKS.—All white blooms remain very firm in price, the general supplies being even shorter than last week. A larger supply of double white Stock will be greatly welcomed from home growers, for French supplies are practically finished for the season. The first consignment of double white Narcissus (flore plena) is expected daily from the Channel Islands. Narcissus Poeticus is now taking the place of N. ornatus. Daffodils are arriving in fairly large quantities from Scotland, the varieties consisting mostly of Emperor and Grandee. Richardias are gradually lessening in quantity, therefore prices are firmer. Blooms of Lilium longiflorum are better in quality and sufficient for present requirements at a moderate price. In addition to Gladioli Blushing Bride and Peach Blossom, the first box of The Bride (white) reached the market last week; a very welcome addition. Amongst Irises blue is the most plentiful; white and yellow varieties are more numerous and much improved in quality, but prices remain firm for home-grown blooms. Tulips are again more plentiful and their prices are on the down grade. Many boxes of outdoor blooms are already on sale, and are preferred to those grown indoors on account of the better colour. Carnations and Roses show little change from last week, the supplies of the latter being the most numerous. The newest arrivals in this department are Cornflower and Nigella (Love-in-a-Mist). Sweet Peas are better in quality and met with a good demand, for which reason their prices remain firm.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Albermarle	45 0–50 0
—Oregon Newtown	16 0–19 0
New Zealand Apples—	
—Cox's Orange Pippin	25 0–28 0
—Jonathan	18 0–20 0
—Dunn's Seedling	17 0–18 0
Tasmanian Pears	5 0– 8 0
Tasmanian—	
—Cox's Orange Pippin	18 0–25 0
—Jonathan	16 0–19 0
—Ribston Pippin	15 0–17 0
—Cleo	17 0–20 0
—Others	13 0–15 0
Bananas	16 0–27 6
Figs, (Forced) doz.	6 0–24 0
Grapes—	
—Belgian	2 6– 3 0
—English—	
—Hambro, per lb.	4 0– 6 0
—Muscat	10 0–12 6
—South African—	
—White Hanepoot	6 0–10 0
—Red Hanepoot	8 0–10 0
—Colmar	10 0–12 0
Grape Fruit, Cuban	25 0–30 0
—Jamaica	25 0–30 0
—Florida, finest	27 6–37 6
Lemons, Messina, per box	8 0–10 0
—Murcia	12 6–16 0
—Naples	12 0–20 0
Melons (Forced)	3 0– 8 0
Oranges, Jaffa	14 0–16 0
—Spanish—	
—300's	18 0–32 6
—360's	16 0–24 0
—504's	16 0–22 6
English Peaches, per doz.	12 0–42 0
Pears, South African—	
—Beurré Bosc	5 0– 6 0
—Doyenné du Comice	8 0–10 0
—Josephine	5 0– 6 6
—Keiffers	— 4 0
Pines	6– 5 0
Strawberries, per lb.	4 6–10 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Asparagus—	
—Evesham	5 0– 6 0
—Special	10 0–12 0
—Devon	6 0–12 0
Beans, Guernsey, per lb.	1 6– 2 0
—Worthing	1 6– 2 0
—Madeira, per box	3 6– 6 0
Beets, per cwt.	5 0– 8 0
Cabbage, per tally	7 6–10 0
Canary Island Tomatos	18 0–25 0
Cauliflowers, per doz.	2 6– 4 0
Chicory, per lb.	0 7– 0 8
Carrots, new, per doz. bun.	6 0– 8 0
Cucumbers, per doz.	4 0– 5 0
—Flats, 36's, 42's	10 0–16 0
Dutch Onions	11 6 12 6
Endive, per doz.	1 6– 2 6
—Batavian, per doz.	3 0– 3 6
French Asparagus—	
—Cavaillon	1 3– 1 6
—Lauris	1 6– 3 0
Greens, best, per bag	5 0– 6 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundles	2 6– 3 6
Lettuce, per doz.	— —
—Cos	8 0– 9 0
—Dutch, per crate	5 0– 7 0
Mushrooms, cups	2 6– 3 6
—broilers	2 0– 2 6
Marrows, doz.	6 0–12 0
Mint, Forced, per doz.	4 0–12 0
Onions, Valencia, per case	15 6–17 0
—Egyptian, per bag	11 0–12 0
—English, per cwt.	12 6–14 0
—Spring	— 4 0
Parsnips, per cwt.	8 0– 4 0
Peas, French, per cane	5 0– 7 0
—Guernsey forced per lb.	1 3– 2 0
Potatos, Canary Island	10 0–14 0
Potatos, per ton—	
—Dunbar	240 0–260 0
—King Edward	200 0–240 0
—Others	90 0–160 0
—New Guernsey lb.	0 5–0 8
—Jersey	0 5–0 8
—Scilly	0 6–0 8
—Spanish, new, per cwt.	20 0–22 0
Radishes—	
—Round	1 0– 2 0
Rhubarb, Forced, per doz.	1 3– 1 6
—"Natural" per doz.	5 0– 7 0
Seakale, Natural, ½-sieve	8 0–10 0
Spinach, per bushel	3 0– 4 0
Tomatos, English, per lb.	
—Pink	1 3– 1 4
—Blue	12 0–14 0
—White	12 0–14 0
—Pink White	1 3– 1 4
—Guernsey	1 3– 1 6
Turnips, new, per doz. bun.	9 0–10 0

REMARKS.—The brighter weather has been a big factor in the improvement both in the demand and supply of most commodities handled in Covent Garden. Australasian Apples are in good demand at slightly better prices. Grapes and Pears from the Cape are in heavy supply and are selling well. Hothouse Grapes are arriving in better quantities and selling fairly well. Choice fruits, such as forced Peaches, Strawberries and Melons are also in favour. Hothouse vegetables, such as Beans, Peas and new Potatos are generally an easier trade mainly owing to increasing supply. Tomatos have developed rapidly and the price level is lower in consequence. Large numbers of Cucumbers are being marketed and they are selling freely. Mushrooms, after a long period of steady prices at a good level, are inclined to be easier in value. Salads are selling freely. Better class vegetables, such as Seakale and Cauliflowers, are in firm demand. Green vegetables are also a better trade. Trade in old Potatos is quiet.

GLASGOW.

From a business standpoint May is generally one of the worst months of the year in the cut flower market. The old superstition against May weddings still prevails; the rent day falls on the 15th, and to add to these adverse influences, the weather has been most unseasonable. In view of these adverse factors, combined with abundant supplies, prices were more satisfactory than might have been expected. Tulips were very mixed in quality, but indoor-grown blooms of William Copland, Clara Butt, Farncombe Sanders, and Afterglow made 1/- to 1/4 for 6's, outside blooms averaged 6d. to 9d., and small specimens of White Swan brought 4d. to 6d. for 12's, W. Coplands, 5d. to 9d.; Gris de Lin, 5d.; Prince of Austria, 7d. to 8d., and Murillo (blown), 3d. to 4d. Iris Imperator kept firm at 2/6 to 2/9 per dozen, and Guernsey Blue, 6d. to 9d. for 6's. Daffodils commanded higher values, Emperor ranging from 4/- to 6/- per dozen, Barrii, 2/6 to 5/-; large Pheasant Eye, 3/6 to 5/-; Glory and Grandee, 3/- to 4/-; Horsfieldii, 6/- to 8/-, while special Cleopatra from Highfield made 18/-. Carnations were unaltered in price at 2/- to 5/-, all colours. Richardias realised 3/- to 6/- for English and 4/- for Guernsey blooms, while Lilium longiflorum (Harrissii) were cheaper at 3/6 to 4/-. Roses were in fair demand at 2/- to 4/- for Richmond, 4/6 to 5/6 for Madame Butterfly, and 3/6 to 5/- for Mrs. H. Stevens. Asparagus brought 1/- to 1/3 per bunch, Lily-of-the-Valley, 6d., Gypsophila, 6d. to 1/-, and Ixia, 3/- to 4/-.

Pot and bedding plants are now arriving in greater quantities. Spiraeas sold at 1/9 to 2/6 per pot, Aspidistras 1/- to 1/6, Ferns at a 1/- to 1/3, Geraniums at a 1/-, while Sweet Peas made 2/- to 2/6 per dozen packets, Wallflowers and Polyanthus, 1/- to 1/6, and small Azaleas (Dutch), 4/- to 6/- per dozen.

New season's vegetables found a ready sale. Cucumbers ranged from 6/- to 9/-, French Beans, 1/9 to 2/-; Asparagus, 1/9 to 2/3; Carrots and Turnips, 9d. and 10d.; English and Dutch Lettuces, 2/- to 2/9; Scotch Lettuces, 3/-; Seakale, 12/-; Radishes, 3/-; Syboes, 4/- to 5/-; Parsley, 6/-; Peas, 7/- per bag; Teneriffe Potatos, 12/- and 13/-; Spring Cabbage, 5/6 per pot; Guernsey Tomatos, 1/6 to 1/9 per lb., and Teneriffe Tomatos, 22/- to 30/- per bundle. Cauliflowers advanced to 8/- per dozen, while forced Rhubarb continued dear at 56/- cwt. Field-grown varieties averaged 16/-.

Business in the fruit market was a little slow at the beginning but improved towards the close. Scotch and English Strawberries were down to 5/- and 6/- per lb., English Peaches made 18/- to 24/- per dozen, while home-grown Grapes sold at 3/6 to 4/6. Pears were again a feature and ripe fruit was in good demand. Cape Doyenné du Comice averaged 8/6 to 9/-; Winter Nelis, Josephine de Malines, and Glou Morceau, 6/- to 7/-; Keiffer, 4/6 to 5/6; Beurré Bosc, 6/6 to 7/6; Beurré Diel, 5/6 to 6/6; Australian Beurré Bosc, 7/- to 9/-, and Williams's Bon Chretien, 14/- to 16/- half case. Australian Cleopatra, Jonathan, Ribston Pippin and Sturmer Pippin Apples fluctuated between 17/6 and 20/-, and Oregon Newtowns, 18/- to 22/-. Grape Fruit rose to 33/- for 64's, and 35/- for 70's, and the average prices of Oranges were as follow:—Murcia, 300 and 240, 18/- to 20/-; 504 and 420, 17/- to 19/-; Valencia, 240, 15/-; 360, 17/-; 300, 19/-, and 420, 24/- to 21/-. Cape Grapes were firm, red Hanepoot realising from 12/- to 15/6; white, 10/6 to 12/6; Gros Colmar, 16/- to 18/-, and Waltham Cross, 12/- to 14/-.

THE WEATHER IN APRIL.

APRIL was a sunny month with very westerly winds. Air pressure was somewhat low, and slight showers were frequent; but the atmosphere was drier than usual and other factors—mean temperature, wind speed, evaporation, and subsoil water level—were nearly normal. Ozone was very abundant. The mean temperature was 45.9°, or a trifle of 0.2° above the average. Of sunshine, nearly 193 hours were recorded, or 23 more than usual. Rain fell on 18 days, or four above the normal number, but the total fall was only 1.69 inch, or 0.14 inch less than the average. Moderate gales occupied 18 hours of the 15th day, and on the morning of the 16th a "whole gale" developed, in which a run of 60 miles of wind was registered for the hour centreing at 6 a.m., and, in gusts, a rate of 80 miles per hour was attained, much young tree and garden growth being blackened. Ground frost occurred on nine nights, but the exposed thermometer never fell below 23°, and there was no frost in the screen. A thunderstorm was experienced on the evening of the 8th; and slight showers of hail on the 15th, 23rd, and 28th. No fog was reported. *Joseph Baxendell, The Fernley Observatory, Southport.*

GARDENING APPOINTMENTS.

Mr. Henry Graydon, lately employed by Mrs. F. PARKER, at Norcross, Carleton-le-Fylde, near Blackpool, and formerly at Ashton Gardens, St. Annes-on-Sea, has been appointed Parks Superintendent to the Borough at Workington, Cumberland.

Mr. R. H. Turner, for three years Gardener to Capt. R. G. BUXTON, Pettygards Hall, Kings Lynn, Norfolk, and previously for seven years Foreman at Didlington Hall, Norfolk, as Gardener to F. N. H. WILLS, Esq., Miserden Park, Cirencester, Gloucestershire. (Thanks for 2s. for R.G.O.F. Box.—EDS.)

Mr. Alfred Edney, for the past six years Gardener to B. GOODMAN, Esq., Edgbaston, Birmingham, as Gardener to J. M. STOKES, Esq., Hill Crest, Evesham, Worcestershire. (Thanks for 1s. for R.G.O.F. Box.—EDS.).

CATALOGUES RECEIVED.

SALE AND SON (Wokingham), LTD., Wokingham, Berkshire.—Vegetable plants, bedding plants, etc.

J. CARTER AND CO., Raynes Park, S.W.20.—Tools and garden requisites.

HURST AND SON, 152, Houndsditch, E.1.—Bulbs (Wholesale).

THE
Gardeners' Chronicle

No. 2004.—SATURDAY, MAY 23, 1925.

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Average Mean Temperature for the ensuing week deducted from observations during the last fifty years at Greenwich, 56·3°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, May 20, 10 a.m. Bar. 30·1, temp. 55°. Weather, Raining.

The Ideal Keeper of the Wisley Garden.

The task of discovering the ideal gardener for Wisley, on which, doubtless, the Council of the Royal Horticultural Society is now engaged, must inevitably prove a difficult one. The ideal Keeper of a garden which should become under his care the most beautiful in the world must evidently possess many qualities rarely combined in one individual. He must, of course, have a wide knowledge of plants and of their garden values. To that knowledge, based on long and varied experience, must be joined an openness and an elertness of mind which should make the Keeper quick to anticipate the promise of all the many new introductions in the cultivation of which Wisley should be pre-eminent. Added to these qualities must be an unerring—or shall we say, since the ideal Keeper is but human—a rarely erring judgment in the large questions of garden design. For to him will fall the dual task of demonstrating the beauty of old styles of gardening and of discovering that of new styles. The ideal Keeper must, moreover, carry this burden of knowledge lightly, not staggering morosely under its weight, but bearing himself urbanely so that all who visit the Wisley Garden may carry away from it not only knowledge, which is precious, but a feeling of serenity yet more precious, and the finest thing to be got out of any garden. The ideal Keeper must also know how to manage men and to communicate his enthusiasm to them. Fortunately for the prospects of success in finding him there are certain qualities which the ideal gardener need not possess. Even though he lack all knowledge of the life histories of pests and the attributes of artificial manures, and although he has never practised the scientific breeding of plants and recks not of plant chimeras, he may still prove the ideal Keeper, provided only he has an accessible mind and understands the importance of lending his practical aid to those who are engaged in scientific horticultural research. Where then, it may be asked, is search for the ideal Keeper likely to attain success? If these arguments are sound, it is evident that the search must be among the members of the older rather than the younger generation of gardeners. And this not because the younger generation is not at least as good as the old—to suggest such a thing is to be guilty of *lèse-majesté* to youth—but because no man not yet arrived at middle life could have had the time to garner in enough experience to enable him to set about the work at Wisley which requires urgently to be done. Nor need this conclusion be regretted, for on the one hand the R.H.S. owes in very large measure the reputation which it enjoys to-day to the old gardeners—Robert Thompson, Archibald Barron, and S. T. Wright, who served the Society from its early Chiswick days. Each of the three was in his way a great gardener, and if their successor be their equal the future of Wisley as a garden is assured. Not the least of the tasks which await the Keeper is to take up the training of young gardeners. This he needs to do both for the benefit of the country and of Wisley. The scientific side of the education of the gardener is already done extremely well at the gardens, and if there can be added to this an equally good training in the art of gardening, youth will presently come into its own, and the successor of our ideal Keeper will be found in the ranks of the youth who will flock to Wisley to learn the full art and craft of gardening. It need scarcely be said that, provided the attractions of the post are adequate and the emoluments generous, it should not be impossible to discover the man who fulfils all these conditions, and who is worthy of a post which should be the most coveted of all gardening posts.

Walnut Culture in Oregon.—An American contemporary states that Walnut culture is at present one of the most profitable lines in horticulture in Oregon. A Walnut Orchard in full bearing will yield about one thousand pounds weight of nuts per acre each year, giving a gross return of about $250. As the gross working charges amount to from $50 to $75, this leaves a net income of about $150 to $200 per acre. In the earlier years a Walnut orchard is intercropped with early-bearing fruits, and these are gradually thinned out as the Walnuts increase in size. The extra cultivation necessary to the "fillers" is considered to be of great advantage to the Walnut trees.

Genetics of Variegation and Leaf Structure of Ferns.—At the recent meeting of the Linnean Society, Dr. W. Bateson, F.R.S., gave an interesting account, illustrated by lantern slides, of the investigations conducted by Miss L. Andersson at the John Innes Horticultural Institution, into the genetics of variegation and leaf structure in four distinct Ferns. Spores being sown on Knop-agar, the several kinds of prothallia could be counted and observed continuously. Segregation in respect of green or pale plastids may occur (1) at reduction; (2) during the prothalial growth; or (3) in somatic tissue of the sporophytes, or in any of these stages successively. Starting from the variegated Fern the course was in each genus distinct. *Lastrea:* prothallia all green (probably some spores non-viable), giving Ferns all variegated. *Adiantum:* from any one sporangium prothallia mixed; either white, or green, all subsequently acquiring white stripes, and producing Ferns either entirely white, or green with white stripes. *Scolopendrium:* any one sporangium gives exclusively prothallia either all greens, giving all green Ferns which breed true; or all pale, which gives variegated Ferns only. *Polystichum:* behaviour too complex for summary. Segregation may occur at any stage. It may be completed at reduction, or postponed to the haploid stage, or to the diploid. In *P. angulare* the forms known as *truncatum* and *compactum* are probably Mendelian recessives. Professor Weiss, in his remarks on the subject, expressed some doubt as to whether the various phenomena described represented the same type or kind of variegation. He was of opinion that further investigations on the physiological conditions of the cells were required to elucidate the nature of the colourless cells.

The Harding Cups for Paeonies.—Paeonies are so comparatively easily grown that it is a matter of surprise they are not more largely used in our gardens. In America their value has been realised for some time, and there seem to be many enthusiasts who cultivate a great number of varieties. Among them the best known is Mrs. Edward Harding, who published in 1917 *The Book of the Peony*, and, more recently in 1923, a smaller volume on *Peonies in the Little Garden*. So convinced is Mrs. Harding of the value of Paeonies for garden decoration that she has presented to the Royal Horticultural Society three cups to be awarded for exhibits of these flowers. The first will be offered for competition at the Royal Horticultural Society's show on Tuesday, June 9, 1925, for the best exhibit by an amateur of three flowers each of six varieties of Paeony. Medals will be awarded as the second and third prizes if the exhibits are considered to deserve them. It is hoped that Mrs. Harding's generous offer will encourage a keen competition among amateur growers of Paeonies. Entries should reach the Secretary of the Royal Horticultural Society, Vincent Square, London, S.W.1., not later than the first post on the morning of Wednesday, June 3, and all exhibits must be staged not later than 11 a.m. on the morning of Tuesday, June 9.

Unemployment Insurance for Agricultural Workers.—The Minister of Agriculture and Fisheries and the Secretary for Scotland have appointed Sir R. Henry Rew, K.C.B., Mr. John Beard, Mr. David Black, Sir Thomas Davies, M.P., Mr. Thomas Denholme, Mr. James Falconer, Mr. James Gardner, Mr. Thomas H. Ryland, Mrs. Lucy Deane Streatfield, C.B.E., Mr. R. B. Walker, and Mr. Denton Woodhead to be a Committee to consider and report whether it is desirable that workers in agriculture should be compulsorily insured against the risk of unemployment, and, if so, on what terms and conditions, and in what manner the insurance of agricultural workers can be most effectively provided, either by the inclusion of agriculture within the scope of existing legislation or by means of new legislation. Sir R. Henry Rew, K.C.B., has been appointed Chairman of the Committee, and Mr. R. E. Stanley, of the Ministry of Agriculture and Fisheries, and Mr. F. W. Charlton, of the Ministry of Labour, Joint Secretaries.

The Late Prof. A. N. M'Alpine.—A Committee has been appointed to organise a memorial to the late Prof. A. N. M'Alpine. It is proposed that the memorial should take the form of a prize or prizes in botany. Subscriptions may be sent to Mr. J. W. Reid, 6, Blythswood Square, Glasgow.

Flowers and Sweet Herbs at the Old Bailey.—At the opening of the May session of the Central Criminal Court, Old Bailey, on Tuesday, the 12th inst., the Lord Mayor, Judges, Aldermen, Sheriffs, and Under-sheriffs were presented with bouquets of flowers, and the bench was strewn with aromatic herbs. The Recorder of London, Sir Ernest Wild, K.C., explained the custom, and stated that it originated from the time when the conditions of the gaol and cells at Old Bailey were so foul that gaol fever used to permeate from the dock to the bench. About the year 1756 the Lord Mayor and two of the Aldermen died as a result of the pestilential condition of the prisoners, and flowers and sweet herbs were afterwards used to mitigate the infection.

"Botanical Magazine."—Twelve plants are illustrated and described in part 3, Vol. CL., of Curtis's *Botanical Magazine*. Chelonistele pusilla, t. 9046, represents a Malayan genus allied to Coelogyne. C. pusilla is near to C. sulfurea but is a much smaller plant with smaller flowers. The whitish-tawny sepals are broad and the comparatively broad lip has an orange or cinnamon-coloured blotch on the middle lobe. Chirita lavandulacea, t. 9047, is a pretty Gesneraceous plant with the usual tubular flowers that are lavender-blue in the limb and whitish in the tube. It makes a good stove plant and flowers freely throughout the winter. It has been recommended for associating with Begonias and similar greenhouse plants. Tupa humilis, t. 9048, was described under its synonym T. aucheriana in *Gard. Chron.*, August 11, 1883, p. 168. The flowers are usually blush-pink, more rarely bluish-lilac or verging toward violet, but the base is always of a rich, golden yellow. Cupressus Duclouxiana, t. 9049, is closely related to C. sempervirens from which it differs in its slender branchlets with more acute scale leaves and the smaller cones, with their smaller, hardly winged and often triquetrous seeds. Callistemon citrinus var. splendens, t. 9050, is a loosely branched shrub up to 5m. high and producing cylindrical spikes and flowers with an abundance of brilliant crimson stamens that are the most attractive part of the plant. Rhododendron Lyi, t. 9051, is a new Chinese species having white flowers with a lemon-coloured, green-spotted blotch in the throat and tinged with green on the outside. Aronia melanocarpa, t. 9052, is the American Chokeberry; a name also applied to A. arbutifolia. It forms a small shrub producing corymbs of eight to ten flowers that are white flushed with rose colour inside. The flowers are succeeded by globose fruits that are glossy black and very juicy. Primula Beesiana, t. 9053, was described and illustrated in *Gard. Chron.*, September 30, 1911, p. 242, Fig. 110. It was discovered by Forrest on the Likiang range in 1906, the same year as he discovered P. Bulleyana to which it is allied. Campomanesia thea, t. 9054, belongs to the Myrtaceae, and like most members of that genus is sweetly scented. It belongs to the same tribe as the common Myrtle, and forms a big shrub or small tree that produces solitary, axillary flowers on delicate stalks. They are white with yellow anthers, the latter being very numerous. Begonia manicata, t. 9055, is a well-known plant in cultivation and has been frequently described and illustrated in *The Gardeners' Chronicle* (see *Gard. Chron.*, March 1, 1913, p. 135, and March 11, 1916, Fig. 54). Pulsatilla Regeliana, t. 9056, is very closely allied to Anemone and, indeed, might be mistaken for one. It produces widely campanulate flowers of a bright violet colour, and has been in cultivation at Kew for twenty years. It is said to be a very hardy, long-lived plant and requires no special treatment. At Kew it forms large clumps which, from April onwards, produce a succession of flowers. In a normal year it fruits freely in July. Protea subpulchella, t. 9057, is a new species raised from seeds sent to the Edinburgh Botanic Garden from the Cape Town Botanic Garden, but the exact origin of the seeds is unknown. It is very closely allied to P. pulchella and has by far the smallest flower heads of all the species of the Speciosa section to which it belongs.

Allotments.—The Bill introduced in the House of Commons by Capt. Bourne to facilitate the acquisition and maintenance of allotments, and to make further provision for the security of tenure for allotment holders, came before a Standing Committee in the House of Commons on Wednesday, the 13th inst. The amendments proposed by Col. Wedgewood, providing that loans be made to allotment societies for hiring land on lease, and for equipping any land, either purchased or hired, for allotment purposes, were negatived. Mr. Edward Wood, Minister of Agriculture, moved an amendment for increasing the amount required to be raised by an allotment society among its own members in order to qualify for a loan from one-third to one half of the value of the land proposed to be acquired. After a discussion Mr. Wood withdrew his amendment, but stated that he could give no undertaking that it would not be revived on the report stage.

Photo by H. Walter Barnett, Knightsbridge.

THE RT. HON. SIR ALFRED MOND, BART., M.P.

Chairman at the Annual Festival Dinner of the Royal Gardeners' Orphan Fund, May 13.

Wembley Garden Club.—The establishment of a new Wembley Garden Club creates a desirable feature which promises to be the social centre of this year's social life at the British Empire Exhibition. The premises have been suitably decorated, and include a spacious restaurant, rooms for private parties, reading and smoking rooms, etc. There will be a separate and private entrance to the Club, by way of Raglan Gardens, a short distance from Wembley Park Station. The membership fee of £3 10s., includes membership of the Fellowship of the British Empire Exhibition, and thus provides a season ticket for the six months during which the exhibition will be open. The Club will be open daily, Sundays excepted, and arrangements are being made to provide opportunities for various distinguished guests to speak on Imperial and other important matters.

Development of Rural Industries.—A residential college for land workers is to be opened at Offenham, near Evesham. The college will be entitled Avoncroft, and is due to the initiative of Mr. George Cadbury who has presented to the trustees two houses, a bungalow, and fourteen acres of highly productive land near the River Avon in the Vale of Evesham. There will be living accommodation for twelve to fifteen students and the fees will be exceptionally reasonable. The course will include a general outline of modern history, literature, economics and sociology, with particular reference to rural conditions. There will be lectures on physics, chemistry, and biology, and instruction in farm accounts, marketing, credit, rural local government, and other matters concerning agriculture. Mr. F. M. H. Holman has been appointed warden and he will be assisted by a staff of well-qualified lecturers. Grants in aid of fees are to be awarded by the Committee to would-be students of special merit.

Appointment at Rothamsted.—Lord Clinton has been appointed Chairman of the Committee of Management of the Rothamsted Experimental Station in succession to Lord Bledisloe, who resigned on accepting the post of Parliamentary Secretary to the Ministry of Agriculture and Deputy-Minister of Fisheries.

Accident to Mr. G. P. Miln.—We much regret to record that Mr. G. P. Miln, managing director of Messrs. Garton's Ltd., Warrington, met with an accident in London. He was knocked down by an omnibus opposite Euston Station while on a journey to attend several agricultural meetings. He sustained a fractured leg and fractured ankle. We are glad to learn that he is now making satisfactory progress in a private nursing home, and it is hoped he may be well enough to return home in a week or two.

Appointments for the Ensuing Week.—Tuesday, May 26: Newcastle and District Horticultural Mutual Improvement Society's lecture. Wednesday, May 27: Mitcham, Tooting and District Horticultural Society's meeting. Thursday, May 28: Bath and West and Southern Counties Society's show at Maidstone (5 days); Royal Botanic Society's meeting. Srturday, May 30: Wakefield and North of England Tulip Society's show (4 days).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Cheiranthus Marshallii.*—I see by the account of the show at Regent's Park that you noticed my new Cheiranthus as being Violet scented, and as being represented to be so by me. I believe the plant shown was one I sent through Mr. Moore, of the Chelsea Botanic Garden, and it may, by a *lapsus calami*, have been so described by me. The plant in question, however, will remind those whose olfactory nerves are in right order more of honey than Violets. It is one of the character of Galium vernum and some other common plants, and, while strong, is not overpowering. You will doubtless ere long have an opportunity of testing it yourself, as I have every expectation it will become a very popular plant. It is a hybrid between Erysimum Perofskianum and Cheiranthus ochroleucus. *R. M. Stark, Edinburgh.* [To us the smell is more that of Violets than of honey]. *Gard. Chron., May* 25, 1850.

Publications Received.—*The Downy Mildew of the Hop.* By E. S. Salmon and W. M. Ware. South-Eastern Agricultural College, Wye. Price 6d. *The Gardener.* By L. H. Bailey. Macmillan & Co., St. Martin's Street, W.C. Price 8s. 6d. net. *Genetics in Plant and Animal Improvement.* By Donald Forsha Jones. Chapman and Hall, 11, Henrietta Street, Covent Garden, W.C. 2. Price 20s. net.

TREES AND SHRUBS.

RHODODENDRONS OF THE LAPPONICUM SERIES.

(*Concluded from page* 335).

R. FLAVIDUM.—This species is one of the most interesting in the group on account of it having Primrose-coloured flowers, which are produced during April; there is a second crop of blooms in the autumn. The upper surface of the leaves is bright green and the foliage strongly aromatic. Ten-year-old bushes are about two feet high and less through; they are healthy and never seem to suffer. R. flavidum is a delightful member of the series and may be recommended without any reserve. I read in *The Gardeners' Chronicle* that it has been crossed with R. brachyanthum; as this latter species belongs to another group, and has a short, thick and bent stigma, it would be still more interesting to see a reciprocal cross. I have read that R. flavidum is not in cultivation, which must be erroneous.

R. CHRYSEUM.—Another species with yellow flowers, but with a habit quite different from R. flavidum and a more cushioned shape, after R. impeditum. It is a humble shrub in its native country, Western China, for there it only reaches one inch to two inches in height. Young plants appear to be shy in flowering. The foliage is dark green and indicative of good constitution and hardiness. The flowers are small, half-an-inch or so across, and do not appear much above the foliage.

R. NIGRO-PUNCTATUM.—I believe this species is under dispute as to its correct naming. As I know it the plant is two inches or so high, with thin, wiry twigs, close growing, but not dense or entangled, the inner twigs being inclined to die back. The leaves are small, aromatic, and not crowded; the inflorescence is terminal, consisting of two to four flowers of a bright purple shade, which appear later than any others I know of in the series.

R. CUNEATUM.—This is by far the strongest grower amongst the series; the habit is stiff and more after R. rubiginosum or R. heliolepis. The leaves are one inch to three inches long, almost oblanceolate, and with a cuneate base; they assume a lovely purplish colour in the autumn unapproached by any others in the group. The flowers are produced abundantly, usually four to six in an umbel; they are mauve coloured and have a long style. The calyx is rather large, the sepals membranous, and with a ciliate edge. The plant yields plenty of seeds.

R. CHEILANTHUM.—A very near ally to the above and may be termed a smaller form. The leaves are less in size and are elliptic. The flowers also are smaller and a little deeper in colour. An intermediate variety bridges the two.

R. SETOSUM.—This is a Himalayan species of dwarf habit, said to grow one foot or so high. It is distinguished from the species I have enumerated by the long bristles to be found on the young wood and the leaf margins; the flowers are purple with a style longer than the corolla.

Other species not so well known—and perhaps it is too soon to predict or estimate their future value as garden plants—are R. cantabile, R. achroanthum, and R. osnerum, three species which do not make much lateral growth. These three species have a bare appearance owing to lack of foliage; they have inflorescences consisting of a dense cluster of six to ten sessile flowers with protruding stamens, and the flowers are so packed as not to be seen to advantage. The colour ranges between purple and magenta.

Another set which may be near to the last three comprise R. telmateium, R. pycnocladum, and R. idoneum, but these differ in having very small leaves and flowers, also a dense, twiggy habit. The flowers range in colour from purplish to cobalt blue.

There are also many other species I know by name only, such as R. verruculosum, R. violaceum, R. nivale, etc., and it is generally agreed that these, with the others, are very near to one another, only minute differences separating them. But they may differ in such qualities as hardiness, early or late flowering, whilst some grow better in one position than another, and there is always some difference in habit; they also offer the hybridist some scope. *C. F. C.*

EXOCHORDA GRANDIFLORA.

ALTHOUGH the "Pearl-Bush" is by no means a recent introduction, having been brought to this country by Fortune nearly seventy-five years ago, it is not met with nearly so frequently as its merits deserve. It is a white-flowering shrub blossoming in early May, a native of Northern China, and may therefore be considered hardy in all but the most upland and exposed parts of this country. It grows very freely in the western districts, a fine group here being over twelve feet high and about eighteen feet in diameter. The plants are covered at the moment with the pearly white flowers, which are borne on erect racemes, of from five to ten blooms, each measuring over an inch across.

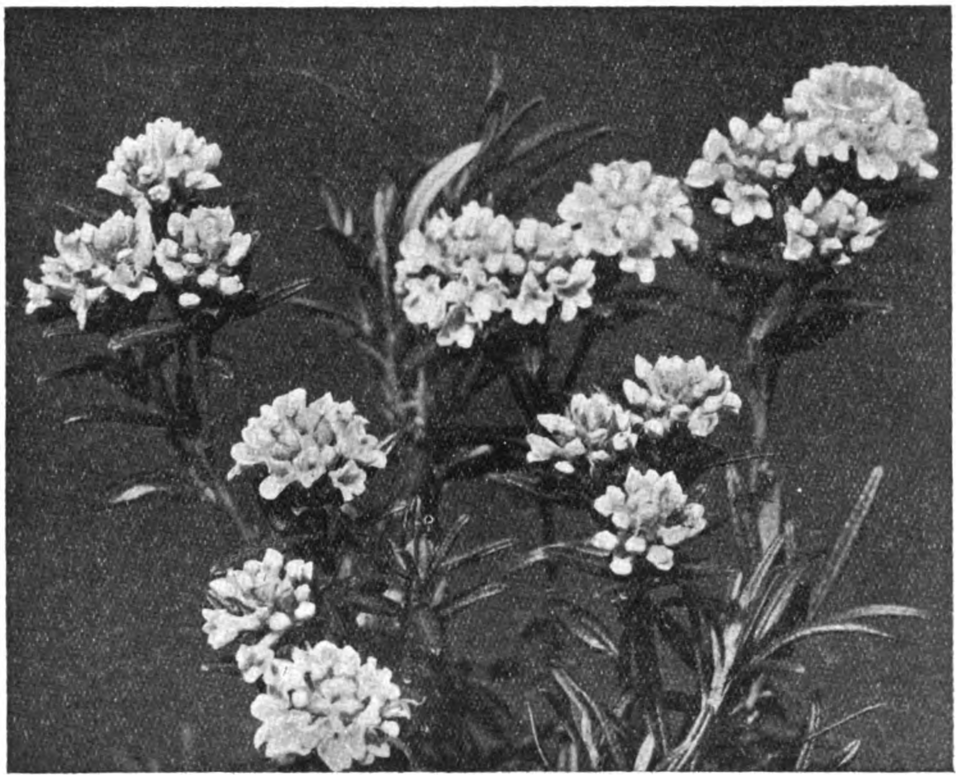

FIG. 146.—RHODODENDRON SPHAERANTHUM.
A new Chinese species with linear-lanceolate leaves and fragrant, blush-coloured flowers.
R.H.S. Award of Merit, April 21.

The name "Pearl-Bush" has been given to this Exochorda from the appearance of its seeds, but so far I have been unable to verify this, as no seed has ever been produced on any of our plants; the rounded, unopened buds have also a likeness to these gems, and the name is very appropriate on that account also.

During some recent mild winters we have had a fair display about the end of November, and it was very interesting to note that at that "out of season" date it was principally the terminal buds on the current year's shoots that opened their flowers, the remaining lateral buds remaining sealed and reserving their energies until May, their proper time of flowering, and thus the full glory of its blooming was but very little impaired *A. S. Harrison, Culzean Castle Gardens.*

BERBERIS.

FOR general utility as hedge plants the Barberries have but one rival, the Privet. They possess every commendable shrub virtue; they are hardy, and have every ornamental characteristic desired for the decoration of the garden. It matters not whether they are grown as isolated shrubs, hedge plants, or in the shrubbery borders, they possess a great charm at all seasons. They flower in spring, fruit in summer; the tinting of their foliage in autumn is highly attractive, while the coral-red and scarlet berries persist during the dull days of winter.

For growing in partial shade few shrubs can equal Berberis Thunbergii, the Japanese Barberry. It is valuable for planting as a permanent edging along carriage drives, etc. It makes dense, compact growth, with spreading, spiny branches, and produces racemes of pale yellow flowers, that are followed by clusters of coral berries.

B. stenophylla is a graceful-growing, Chinese shrub of weeping habit, producing long and densely growing stems furnished with evergreen leaves. The plant is smothered during spring with pale yellow flowers. B. subcaulialata is a species of recent introduction from China, and very attractive, forming compact bushes which are covered with orange-yellow flowers in spring, followed by bright pink berries in autumn. B. Wilsonae has a dense, spreading habit; the shoots are armed with long, needle-like spines. The flowers are golden yellow, and these are succeeded by brilliant red berries, which form the chief attraction of the plant.

Of the numerous hybrids some of the best are those raised in the R.H.S. Gardens, Wisley.

Barberries are very excellent subjects for planting on banks near Water Lily ponds, and they luxuriate in a deeply trenched, loamy soil, but their roots should not be allowed to come in contact with the water. *W. Logan.*

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Phaius.—Many of both the species and hybrids of Phaius are worthy of cultivation. Some of the best known are P. Sanderianus, P. Bernesii, P. grandifolius and the hybrids P. Norman, P. Cooksonii and P. Phoebe. These Orchids bloom at different times of the year so that no definite period can be set apart for re-potting them. This operation is best done soon after the flower spikes have been removed and new roots begin to develop from the base of the young growths. Free drainage is necessary and the compost used should be in a lumpy condition, consisting principally of good fibrous loam mixed with a little Osmunda-fibre and Sphagnum-moss. The plants are best grown in an intermediate temperature and afforded a position where they will receive plenty of air, without being subjected to cold draughts. A liberal supply of water is necessary during their season of active growth, but when the season's growth is completed only sufficient water is needed to keep the soil just moist. P. simulans and P. tuberculosus are rather more difficult to cultivate than those previously mentioned, and require a slightly warmer temperature and more restricted rooting space. They are best grown in shallow Orchid pans with a more open material as a rooting medium. The many hybrids from these species respond more readily to cultivation than the parent plants.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Spring Bedding.—The present is a busy time in the flower garden, and amongst other things preparation must be made for furnishing the beds in the autumn. Many plants, such as Arabis, Aubrietia, Alyssum saxatile, Violas, and the various forms of Phlox subulata, may be increased by division, and the quantity required may be planted out in rows about a foot apart. The double Arabis may also be increased from cuttings, which should be inserted firmly in boxes of sandy soil and placed in a cold frame or at the foot of a north wall. Seeds of Wallflowers, Sweet Williams, Myosotis, Silene, Violas, and Pansies may also be sown for the same purpose.

Bulbs.—Where these have been used for spring bedding and have ceased to be attractive, they may be lifted carefully and transferred to the reserve garden. See that each variety is labelled carefully, and give the ground a good soaking after replanting, when they may be left to finish their growth and ripen naturally. Dig and prepare the beds thus vacated in readiness for bedding out their summer occupants during the next week or two. Even bulbs which are usually left in the ground benefit from being taken up every third or fourth year, and their offsets, which will have grown into large bunches should be separated. This work should be done, however, so soon as the foliage has ripened, for then the roots are at rest. If left for two or three weeks they begin to put forth roots for next year's growth, and this energy would be lost on lifting. The bulbs may be placed in rows with the foliage drawn out straight by the hand, allowing the leaves to remain on the soil, and with the bulb itself covered with earth.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Treatment of Pot-grown Shrubs After Flowering. The future usefulness of such plants as Deutzia, Lilac, Spiraea, Prunus, Viburnum, and others which have been forced, will depend largely upon the treatment afforded them immediately after flowering. The practice of pruning deciduous flowering shrubs immediately after flowering is, with some few exceptions, a sound one. It certainly applies to the above named plants whether grown in pots or in the open ground. The shoots should be pruned severely by cutting away entirely a large proportion of the branches bearing the spent flowers, thus ensuring the proper maturation of the wood that is left and causing new growths to be produced from the base of the plant. In the case of pot-grown specimens, and in view of their greater usefulness when kept within reasonable dimensions, the pruning should be more severe than that applied to plants growing in the open ground. At this time of the year when space under glass is very valuable, there is often a temptation to harden off plants too hastily. After pruning, these shrubs should, if possible, be given every encouragement to make new growth under glass for a few weeks immediately following the operation. By hardening the plants carefully before placing them out-of-doors, this growth may continue without a check. Lilacs may be cut hard back after flowering to the lowest two or three buds on the two-years' old wood, and be plunged outside direct, since I recommend a two years' rest for these plants before forcing them again.

Richardias.—These plants should be gradually hardened after flowering before exposing them to the open air. The supply of water to their roots should be diminished as the old leaves ripen off. Finally, the plants should be stood outside under a south wall if possible where they will get the benefit of all available sunshine, so that the crowns may become thoroughly ripened before the plants are repotted later.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Early Vinery. The Grapes in the early vinery will soon show signs of ripening; see that the border is moist and when water is necessary apply it with great care. Discontinue feeding the roots and damping the house with manure water. Maintain a dry and buoyant atmosphere and admit air through the top ventilators during the night and allow plenty of air in the house during times of hot sunshine. See that the foliage is nicely developed and evenly distributed over the house, keeping the laterals pinched back. Black-skinned Grapes require a little shading of the glass in modern vineries, especially in the case of Teak-wood houses. White varieties will benefit by having the foliage gradually tied back to expose the bunch to extra sunlight. A good mulch of light litter will be found useful in conserving the moisture in the borders during the period that the Grapes are ripe. The bunches of Foster's Seedling and Buckland Sweetwater should be allowed to hang for several weeks after they have coloured to obtain perfect sweetness in the berries. If the variety Madresfield Court is included in the early house, trouble may be experienced in the berries splitting. The laterals of this variety should be allowed to grow without stopping for a few weeks and the borders kept slightly drier, but not so dry as to cause the vines to suffer. Continue to thin all the other Grapes so soon as possible after they are ready.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sassex.

Raspberries. Where the young growths are numerous the present is a good time to remove those that are not required, retaining the most suitable young canes for fruiting next year. They should be near to the old stools so that they are within easy reach of the wires to which they are to be attached. All other growths should be carefully removed from the ground by hand pulling, the operator wearing a pair of gloves and placing his foot close to the young growths to prevent the fibrous roots from being damaged or pulled out of the ground. The Raspberry roots grow very near to the surface, especially after being top dressed with light material, and the ground should not be disturbed by the spade or fork or much damage would be done to the fibrous roots. So soon as the young canes have grown high enough secure each one with a loose tie to the wire, one just sufficient to keep them in position during the fruit-picking season. Raspberries require plenty of moisture, and where the roots are kept damp by mulchings the berries will be much larger and finer than otherwise.

Plum Trees.—On warm walls Plum trees have set their fruits freely and the latter are beginning to swell. If they have set very thickly do not be in a hurry to thin them, especially if the soil is not suited to stone fruits, for many of them will drop naturally when stoning; for this reason it is preferable to defer the thinning until the stoning season is over. Trees growing in heavy soils containing plenty of iron only lose a small percentage of their fruits if they are healthy and well established; on the heavy soil in these gardens we seldom fail to have a good crop of Plums, provided the weather is not very severe at the flowering period, and we do but very little thinning of the crop.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Peas.—Continue to sow maincrop varieties of Peas at suitable intervals, according to the demands of the establishment. Here, on very shallow, chalky ground, the seeds are always sown in prepared trenches into which has been previously incorporated some rich, heavy farmyard manure, this being very beneficial to the plants in times of drought. Up to the present the necessity for mulching earlier rows of Peas has not arisen, but should drought set in, all the rows that are growing strongly should be mulched liberally, thus saving an amount of labour in watering. Grass-mowings from the lawn may be used for this purpose, if farmyard manure is not obtainable. Sticks should be placed to each row so soon as supports are necessary. Ample room should be allowed between the sticks on each side of the rows to allow plenty of room for the haulm to develop. If a sowing is made every ten or fourteen days, one dwarf-growing variety should be included if two or three drills are sown, thus allowing for more light and air between the rows and minimising the danger of early attacks of mildew.

Radishes.—Sow Radish seeds every ten days to keep up a continuous supply. It is preferable to make sowings in two different parts of the garden, thus making certain that no break will occur in the supply. Make one sowing in the open and another in a shaded position. Never allow the seedlings to suffer from drought, which would result in the roots being tough and useless. Birds are very partial to Radish seedlings, therefore, the bed should be netted before the seeds germinate.

Seakale.—The thongs that were planted early in March are making top growth quickly. So soon as the growths are large enough to handle they should be disbudded, removing all but the strongest one. Beyond occasional hoeings when necessary, this crop will not require further attention until the roots are lifted in the late autumn.

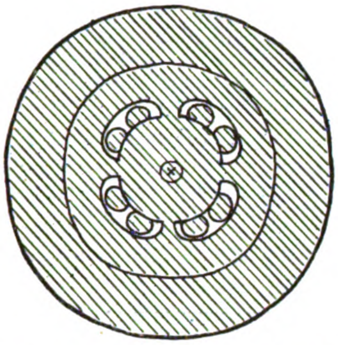

FIG. 147.—CROSS SECTION OF OVARY OF BRAZIL NUT; × 10.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Antirrhinums.—Seedling Antirrhinums may, if hardened sufficiently, be planted in the open, unless the locality is exceptionally backward and the garden much exposed. All summer bedding plants in frames, with the exception of such plants as Ageratum, Begonias, Dahlias, Perillas, and Heliotropes, should be hardened off; all those named will require the protection of cold frames until the second week in June, with us.

Flower Beds and Borders.—After the prolonged rainfall experienced this spring, ground, however well dug in winter, is in a very bad condition for planting, and especially land of a heavy nature. The soil should be forked over some hours previous to planting; thus treated the soil will be much better to plant in, and the young plants will thrive better than if the surface had been merely raked over.

Strawberries.—Plants intended for cropping this year should be mulched without delay, first taking care to remove any weeds from the bed. Use clean straw litter between the rows. The runners in young Strawberry plantations made this spring will now be growing freely. Remove the flower trusses from these plants as they appear. The ground between the rows of young Strawberry plants may be utilised the first year for growing Lettuces, either sown in the rows or transplanted.

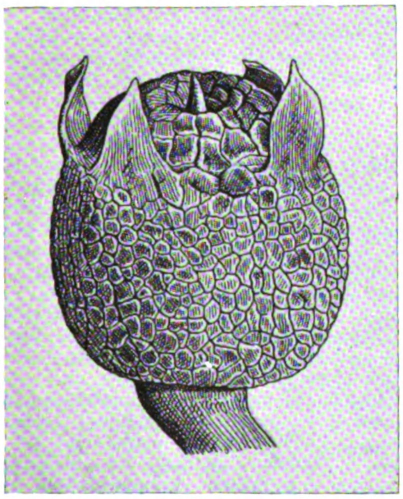

FIG. 148.—YOUNG BRAZIL NUT FRUIT. (Natural size).

THE BRAZIL NUT.

Though the Brazil nut has been known for very many years, and the tree is now in cultivation in tropical Botanic Gardens, the statements which are current regarding its fruits show that their structure is not generally understood. As stated by *J. F.* in your issue of February 7, the ovary is multilocular (quadrilocular in the specimens I have examined) (Fig. 147). The placentation is axile, and in cross section the loculi are crescentic and very narrow. By the time the fruit is an inch in diameter (about three months old), the seeds have completely filled the loculi, and have distorted the septa so that the latter are not easily distinguished. When mature, the fruit is unilocular with no evidence of septa, the latter having decayed and being probably represented by the black pasty substance which is found on the seeds when the fruit is broken open.

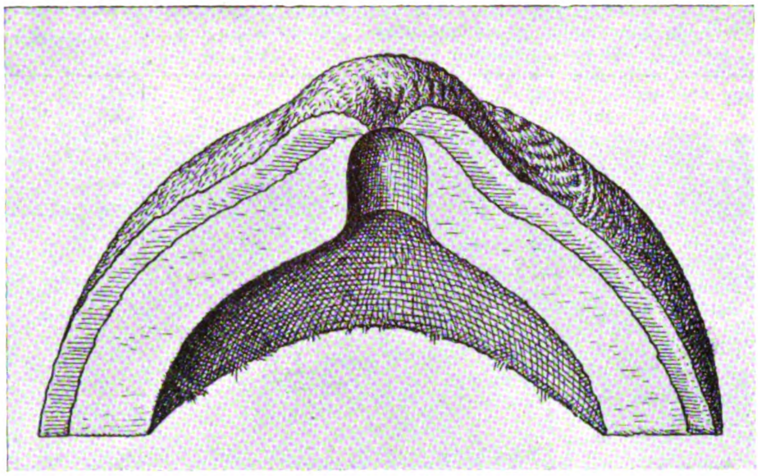

FIG. 149.—BRAZIL NUT: BERTHOLLETIA NOBILIS.

Section through upper half of the wall of the pyxidium, showing the hollow in which the operculum fits.

The fruit does not open by a lid. The only opening is a circular hole (Fig. 149), about one centimetre in diameter, at the distal end of the fruit. This is at first closed by an operculum (Fig. 150), which is more or less cylindric where it fits into the hole in the wall of the fruit, and tapers off irregularly below, where it is embedded among the seeds. When the fruit is mature the operculum is loose, and it may either drop out or remain in the fruit with the seeds.

Miers divided the Brazil nut trees into two species, Bertholletia nobilis, in which the exterior end of the opening is smaller than the diameter of the operculum, with the consequence that the operculum remains in the fruit, and Bertholletia excelsa, in which the exterior end of the opening is larger than the diameter of the operculum, with the consequence that the operculum drops out.

It is quite common to find opercula among the Brazil nuts purchased retail—a fact which demonstrates that the operculum in that case was inside the fruit when it was broken open, and that the "nuts" in question are the produce of Bertholletia nobilis, if Miers' classification into two species is accepted.

Watson, in his article on the germination of the seeds of Bertholletia excelsa (*Annals of Botany*, XV, pp. 99-102) recorded that the fruits he experimented with were intact on arrival at Kew, "the plugs (opercula) being firmly fixed in the apertures, and it is unlikely that either air or water could find a way in." In that case, the fruits had probably been plucked from the tree. At Peradeniya and Henaratgoda, Ceylon, the opercula are free when the fruits fall, more than a year after the flowering.

Willis (*Dictionary of the Flowering Plants and Ferns*) quotes Watson's statement that the plug is formed by the hardened calyx. But, if the development of the fruit is observed, it is clear that the plug is the base of the style, and its prolongation among the seeds is the remnant of the axis of the capsule. The two lobes of the calyx split up and finally disappear as the fruit expands, their position being indicated by the depressed ring which surrounds the orifice at a distance of two or three centimetres.

In the *Journal of Botany*, March, 1913, the late G. S. Boulger asked, "Has it ever been demonstrated by an adequate developmental study that Brazil nuts are true seeds and not endocarps." The question is a legitimate one, for any one who is acquainted only with the ripe capsule, almost completely filled with "nuts." But it would not suggest itself to any one who examined the fruit in its early stages (Fig. 148). *T. Petch, Peradeniya, Ceylon.*

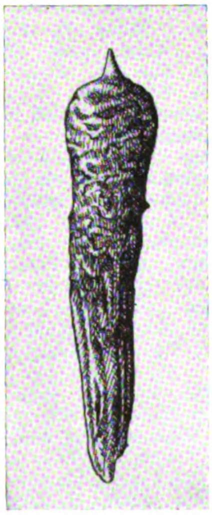

FIG. 150.—THE OPERCULUM OF BERTHOLLETIA NOBILIS.

FLORISTS' FLOWERS.

OUT-DOOR CHRYSANTHEMUMS.

If the appearance of new varieties be a sign of popularity then the outdoor Chrysanthemum is in much esteem at the present time. I will not attempt to describe all recent novelties in these notes because very few of these have been seen in cultivation, and this is the only way to judge of the merits of new kinds of flowers. They must be noted in comparison with those established sorts we know so well.

Recent novelties of merit include a fresh sport of Almirante, known as the golden form of the type. The flowers of this variety are unusually bright, and the parentage is so good that one may give the plant a trial with a certainty of its pleasing. Another is Phoenix, which provides a wealth of bright, bronzy red flowers over a long period. Lichfield Pink impressed me on account of its beautiful light pink colour. Salmon Profusion is a first-rate addition, although, like the type, it is not among the earliest to bloom. Kathleen Wells is a splendid addition to the white varieties, but I am not sure as to it being an out-door variety, yet it is early to bloom. Those enumerated I know by the flower only. An out-door Chrysanthemum of rare merit is Mrs. Jack Pearson, but the raiser holds all the stock of it, although I believe it was seen in one of the public parks last autumn. This Chrysanthemum seems a type by itself, and may be the forerunner of other notable kinds. From my outlook there should be a distinction between early and outdoor varieties. The former may, in some seasons, flower well in the open, but usually they need some kind of protection.

Satisfactory out-door sorts should blossom in September or earlier; they are useful for bedding, and for supplying cut flowers in quantity, and this without stopping the growth or interfering with the habit in any way, save perhaps in removing the flower buds if they come at an unseasonable time.

Guided, then, by the points named, Polly would be the ideal variety. There is a deep yellow form of this variety, which is a bronzy-yellow colour. This form goes by the name of Florrie Wilkinson as well as Golden Polly, for I can find no difference in them.

The blooms of Crimson Polly open with shades of the colour named, but fade to a red-bronze hue. All three are excellent sorts.

Other very early-flowering sorts bearing double blossoms are Goacher's Crimson and Bronze Goacher—these are the more distinct of a group which also includes Golden Goacher and Mrs. J. Fielding. By some, Mrs. William Sydenham is regarded as a better crimson than the first-named; it certainly is commendable.

Mme. Marie Masse is a distinct type of out-door Chrysanthemum, and this sort bears about the roughest treatment of any. Curiously it is often in bloom among the very earliest; yet another season may see it lag behind and exhibit a tendency to make growth instead of flower. Distinct forms Ralph Curtis, primrose, or rather white with a yellow shade; Horace Martin, yellow; and Crimson, the last being really a bronze Masse.

The varieties of this group are esteemed by market growers for field culture to supply a wealth of blooms at a time when out-door flowers are scarce. I have not yet found varieties of other popular colours come in as companions to those already listed; still, Normandie provides a nice pink shade just a little later. I should include Roi des Blancs as blooming very early. This is a much-favoured white Chrysanthemum.

A fortnight or so later, there is a host of varieties to select from. In some seasons, in fact, during the past one, three or four of these proved valuable for blooming in the open. In some autumns, frost has delayed its coming to this extent, that the flowers have opened without protection; still, the risk is ever with the grower.

Almirante, a rather dull shade of crimson is improved in the former known as Red Almirante; this is a superb variety. I like Pink Profusion as it is dwarf and free-flowering. Framfield Early White, and its light yellow form provide flowers of exceptional quality. Sanctity is regarded as a first-rate white, and this variety is known in some places as Excelsior. Goldfinder, yellow, and Harvester, bronzy-yellow, are others that are really good.

Last year Cranford Pink, among semi-early kinds, came perfectly out-of-doors; whilst Almorel, September White, and Mrs. B. Hamilton produced individual blooms of great merit. These large flowers are obtained by selecting crown buds, stopping, and such devices, and if such assist in obtaining the well developed flower for sale it may be a different affair when the plants are cultivated in the ordinary way and the last bushy heads of blooms unfold.

Out-door Chrysanthemums succeed in well-tilled garden earth that is not excessively enriched with fresh manure, which tends to over-growth. The roots must not be allowed to suffer for want of moisture. These plants require but little cultural attention, merely tying the shoots, and an occasional hoeing of the soil. I prefer to start with young plants recently rooted from cuttings; although they may be small, they usually outstrip old, divided stools.

Sorts bearing single flowers are not so plentiful as the others. Crimson coloured single sorts are the more numerous, why, I do not know! Chieftain, Firebrand and Mrs. S. Smith are all good. Doreen Woolman, golden colour, is a fine addition; and John Woolman a first-rate pink. Shrapnel, terra-cotta shade; Natalie, crushed Strawberry tint; Waterwitch, white; Golden Firebrand, and Midnight Sun, fiery-red, are a few of the more striking of the singles, and their growth is satisfactory. *H. S., Woking.*

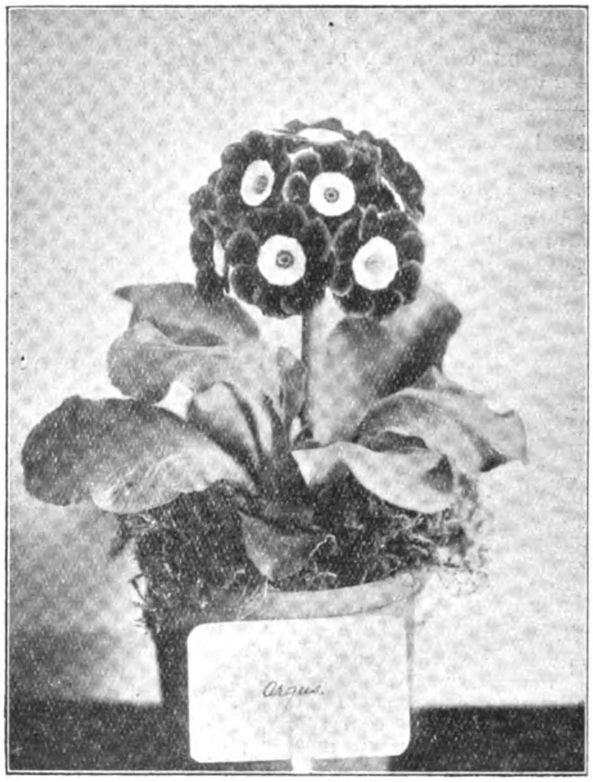

FIG. 151.—AURICULA ARGUS.
An Alpine variety of vinous red colour, and with a regular white centre.
Exhibited by Mr. C. W. Needham at the National Auricula Society's Show at Manchester.
(see p. 353).

THE ROSE GARDEN.

SOME ENEMIES OF THE ROSE.

During the whole history of Rose culture growers have had to combat numbers of insect pests and fungous diseases, and no sooner has growth commenced than it is necessary to watch for, and take measures for the destruction of these pests. One of the most prevalent and persistent of Rose enemies is green fly, and few gardens go through a season without some trouble with it.

When it is considered that a single female of this insect will produce nearly a hundred young, which themselves become breeders in little over a week, it will be seen how important it is to attack aphides promptly. When eggs are hatching, and before the breeders become productive is the best time to make free use of sprays or powders. The actual damage done by aphides is greater than many suppose, for besides sucking the sap from the points of young shoots and new leaves, they deposit a sticky slime, honey dew, which chokes the pores of the foliage and bark, thus hampering healthy respiration, lowering the vitality of the plant, and making it less resistant to the attacks of other pests and diseases.

Caterpillars are other troublesome enemies of the Rose grower, and should be attacked promptly with a spray capable of killing by contact. Some caterpillars are protected from harm by the rolling and gumming together of the leaves in which they live, and if spraying is not done just as the eggs are hatching to prevent this leaf-rolling, it is little use afterwards, and there is no alternative but to resort to the tedious process of hand-picking. The larvae of several of the saw-flies are leaf-feeding and frequently difficult to combat, but they should be attacked persistently with tobacco powder or a nicotine spray.

A still more difficult pest to combat is the pith-eating sawfly, the larvae of which enter the points of young shoots and eat away the pith until the growth collapses and dies. It is impossible to destroy the larvae except by removing the affected shoots before the larvae pupate. Where attacks have been serious a simple method of prevention is to coat the bushes with a thin film of good lime sulphur. Spray so soon as they have started well into growth, when the flies will avoid them and deposit their eggs elsewhere. Unsightly certainly! but less unsightly than dead shoots instead of flowering ones. *W. Auton.*

NOTES FROM EDINBURGH.

Early in April bulbous plants provided a good display, to which large contributions were made by Chionodoxa Luciliae and its varieties, and by the graceful Daffodils. Conspicuous on the rock-garden were Daphne Blagayana, Primula The Jewel, a valuable early-flowering Primula; and Trillium grandiflorum. Saxifraga sancta made an attractive display, and in Ranunculus Ficaria major, a variety of the Lesser Celandine, we have a subject worthy of cultivation

In many parts of the garden, Rhododendrons of note were to be seen in splendour, and the display afforded by this large genus is far from over. Among these early-flowering species notice may be taken of R. intricatum, a dwarf-growing, blue-flowered species, which is an acquisition to rock-gardens. Then there were R. racemosum (a very charming species), R. ciliatum and R. Metternichii. One of the best plants in flower, however, was R. fulgens. This species is represented in the garden by a very large specimen, and was indeed a fine sight when its trusses of blood-red flowers were at their best.

Among other shrubby subjects one may note, in passing, Osmanthus Delavayi, Berberis buxifolia nana and Prunus triloba, the last flowering on a south wall.

Under glass a greater display of flowers might be seen, especially in the Centre House, where the staging is gay with Schizanthus and varieties of Primula sinensis. In addition, were other plants, of which Erica Cavendishii is singled out for special mention on account of the decorative value of its yellow flowers. Neither should the charms of Prostanthera nivea be overlooked, for not only are its white flowers tinged with purple a conspicuous feature, but they are also sweetly scented, a distinction, however, which it shares with the interesting Rutaceous plant, Boronia elatior, whose rosy carmine flowers are much in evidence.

In the corridors groups of Clivias in the borders made a bright display, and several plants on the walls contributed their share to the floral display. The most admired was Viburnum macrocephalum, an extremely handsome and decorative species. Its round panicles of white, neutral flowers produced freely over the plant, were compared by many visitors to large snowballs. This species is a native of China, but not sufficiently hardy to withstand our severest winters. Close by, the long, gracefully arching stems of Pentapterygium serpens are covered with the pendant red flowers which render this species so attractive, and the Edinburgh specimen covers a large area of wall. It is, therefore, very striking when in flower. A close relative to this plant forms another interesting subject, for both flower and foliage of Agapetes macrantha are ornamental. In one of the beds a bush of Eriostemon myoporoides produces its flowers in profusion, and is a handsome shrub which continues in flower for a considerable period. Kennedya nigricans is a Leguminous plant with flowers so dark a shade of red as to be almost black. The porch of the Centre House contains a collection of insectivorous plants, and the curious flowers of several Sarracenias are now in evidence.

A corner of the Cactus House was remarkable on bright, sunny days for a very pleasing colour scheme due to the happy association of three Mesembryanthemums, viz., M. Zeyheri, a rich purple; M. aureum, an orange-flowered species. and a fine yellow-flowered species. M. deltoides which produces its pretty pink flowers very freely. Two interesting Aloes may be seen in this house. They are A. ciliaris, a climber, and A. Borziana, with handsome, green leaves with a white edging, and a fine head of flowers.

Rhododendrons under glass afford interest, contributions to the general display being made by R. Aucklandii roseum, the very floriferous R. lochmium, the red-flowered R. himalaicum, and the pink flowers of R. floribundum. Of the dwarfer-growing kinds, R. ledifolium narcissiflorum is a very decorative plant with double white flowers.

Three shrubby plants in the Rock house call for attention. One is Arctostaphylos Stanfordiana, a native of California. In general appearance it is like Arctostapylos Manzanita, but it is smaller in leaf and flower, the latter being pink. It is, nevertheless, a very attractive shrub. Not far away Grevillea rosmarinifolia is to be seen, its red flowers and green leaves giving it a very pleasing appearance. A duller subject is Daphne retusa, with small, rather thick, dark green leaves and purplish-white flowers.

Elsewhere in the houses Epacris rosea elegans and Leucopogon lanceolatus furnish interesting and decorative subjects.

Tropical plants were represented during April by Brownea grandiceps, whose trusses of red flowers do not suggest at first sight the order Leguminosae, to which this plant belongs. A handsome specimen of Medinilla magnifica at one of the doors of the stove house lures the visitor into the heated interior, where Asystasia scandens, Asclepias curassavica, Manettia luteo-rubra, Psychotria jasminiflora, and the golden-leaved Persoonia Godseffiana are the chief subjects of interest. An interesting plant in Monodora grandiflora flowered in the Palm House early in the month. *Robert H. Jeffers.*

ALPINE GARDEN.

CONANDRON RAMONDIOIDES.

Conandron ramondioides (Fig. 152), a hardy perennial, native of Japan, is a very desirable rock-plant. To those who endeavour to cultivate a representative collection of rock plants it is of particular interest, for it belongs to a Natural Order which is not largely represented in a rock-garden, namely Gesneriaceae. Though described as hardy, care must be exercised in the allocation of its position, for, while it enjoys a moist situation it strongly disapproves of rain falling directly upon its crowns and, like the Ramondia, gives the best results when planted in an almost vertical position with its basal leaves flat against the face of the rocks. A mixture of peat with loam and a little sand added to keep the compost porous, will be found suitable, and the spot selected must be a shady one. The leaves, which somewhat resemble those of a Ramondia, grow in the form of a rosette each leaf being about three inches long, but as they have a habit of curling under they often look much shorter. The flowers, are of a lilac colour with darker markings. Young plants may be planted in the rock-garden towards the end of April, though it is advisable to withhold the planting until there is a fairly settled spell of mild weather.

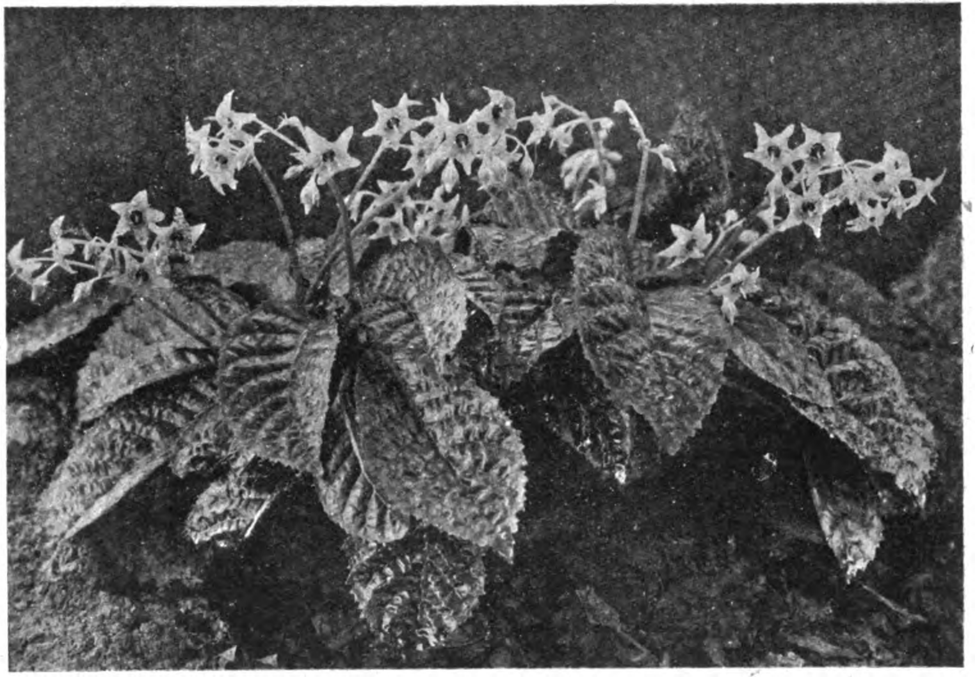

FIG. 152.—CONANDRON RAMONDIOIDES.

Seeds may be sown in February or March in pans containing a very fine, light soil, and the pans should be placed in a warm seed pit until germination has taken place. When the seedlings are large enough they should be pricked off singly into small pots and placed in a frost-proof frame and then gradually hardened off. Here again it is most important that rain should be kept from the crowns and even though they may be in an uncovered frame at this stage a light should always be at hand ready to be drawn over them during wet weather. As an extra precaution the pots could be plunged slightly tilted so as to prevent falling moisture from dripping into the centres of the plants. The subject of the above note is now flowering in the propagating pit at the Glasgow Botanic Gardens. *W. H., Glasgow.*

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EL JARDINCITO JAPONES.

THE name—meaning "The Little Japanese Garden"—is misleading, for it offends against every canon of Japanese art, an art based upon the strictest economy of effect. Only two stone lanterns of orthodox design, and a diminutive gutter, holding ten inches of water, serpentining its way along the garden's length, suggests a bowing acquaintance with things Japanese. Set down in the midst of my ten-acre garden in southern Spain, designed by Garnier, architect of the Paris Opera House, the Jardincito Japones has the independent existence of a garden within a garden.

It is an oval, twenty yards long and ten yards across at its broadest point, the whole surrounded by a Bamboo fence, and for four months of the year this little garden gives an illusion of conditions very different from those which, in Andalucia, make garden design primarily dependent upon a monotonous breaking up of ground into geometrical sections adapted to irrigation.

Here, where every year "there falls not any rain" between the middle of May and the middle of September, and the drought has been known to last over six months, although four months without rain is an average period; where, during the summer, a raging hot wind from Africa, continuing sometimes for weeks on end, reduces a promising vintage by fifty per cent., and sears and blisters even seasoned trees and shrubs; where the temperature in July and August not infrequently rises to 105° in the shade (in Seville during the summer of 1923 the thermometer one day registered 120° in the shade!), and Salvias and Heliotropes prosper only in semi-shade; it is difficult, on this last day of March, even by a violent effort of memory, to picture the Jardincito Japones as it will appear at the end of September, when it is arid, dusty, and bare, with only a patch of rosy Amaryllis, two groups of white Pancratiums, and a few tropical-looking Haemanthus to keep hope alive.

Winter has its terrors, too, for, unlike Malaga, where frost is unknown, there are nights in December, January, and February when such plants as Daturas, Hibiscus, and Euphorbia pulcherrima are badly maimed, especially in positions where they are exposed to the early rays of the sun. In spite of the fact that we are but ten miles from the coast, less than a hundred feet above sea level, and near the southernmost point of Europe, a bad frost has been known as late as the night of the 30th April, accompanied by an icy wind from the Sierra, which wrought indescribable havoc.

In the South of Spain, with its violent extremes of heat and cold (as early in the year as March an unheated greenhouse will vary 40° between day and night temperature), the patio garden, surrounded by high walls affording shelter from sun and wind and frost—a gracious legacy of the Moorish occupation—furnishes the ideal conditions for growing delicate trees and shrubs.

To return to the Jardincito. On the right of the entrance in the semi-shade of an Orange tree, covered with golden fruit and bursting flower-buds, grow a number of scented-leaved Cape Pelargoniums, the names of which, in view of the confusion still existing in the nomenclature of this family, it would be useless to attempt to give. In the same bed are growing two small plants of Escallonia montevidensis and Ceratostigma Willmottianum, brought out from England last October to brave a climate vastly different from the famous Cotswold garden in which they started life. At present both plants, especially the Escallonia, are looking promising enough, but will they survive the summer? It is difficult to feel optimistic, remembering the fate of three Chinese deciduous Barberries, brought out from England in the autumn of 1923. Planted in semi-shade and making vigorous growth the following May, by the end of October they had perished, although kept well supplied with moisture during the summer months.

Opposite the Orange tree, and of about the same height, is a wild Rose, having at the moment an advance guard of some half-dozen blossoms, but which will, in a month's time, be converted into a cascade of pink enchantment. At its foot large clumps of Iris unguicularis flowered continuously from the middle of November until the middle of March. In the same bed a brilliant group of Anemone fulgens is growing happily beside a patch of Nemesia Blue Gem. Near-by a Callistemon will shortly display its brush-like inflorescences, but it is not really happy in our heavy soil and makes but slow growth. In the front of this bed Iris stolonifera and its variety Leichtlinii are thoroughly established and flower freely, especially the latter, at the end of April.

Along one side of the ditch, which we dignify by the name of stream, for about three yards runs a mound upon which among irregularly scattered dwarf boulders, a small Oak tree flourishes. A group of Tulipa saxatilis, happy as in its native Crete; a glossy-foliaged Veronica with Monsignor Violet flowers; a Teucrium fruticans in blossom; a happy patch of Sedum Stahlii; a white-starred Helianthemum mexicanum, growing beside, and threatening to swamp its fellow-countryman, Sedum Palmeri; a brilliant flame-coloured colony of Homeria collina, two varieties of Rhodostachys, which, so far, have refused to flower; and a thriving community of our local Ophrys lutea, are the principal inhabitants of the mound. Here also were planted this spring five varieties of Lewisia, their roots lying beneath large flat stones in an attempt to reproduce as nearly as possible the conditions under which the best specimens are found growing in their native California. Although planted only six weeks ago, Lewisia oppositifolia is already in flower and Lewisia Cotyledon is making vigorous growth.

Beyond the mound a bed of coloured Freesias, chiefly raised from seed, shows the widest range of lilac, pink, cream, bronze and yellow shades. Since the introduction of a few bulbs of coloured hybrids a few years ago, their influence is apparent all over a garden in which seedling Freesias appear wherever wind or birds happen to deposit seeds. Both Freesias and Sparaxis prosper here like weeds, but the more fastidious Ixia requires a lot of coaxing and appears to resent the lime in or the heavy consistency of the soil, for which the annual baking, so like the climate of its native South Africa, does not appear to compensate.

Near the Freesia bed two little shrubs, Malvastrum capensis and Eranthemum pulchellum, are showing flower buds. They are the offspring of two shrubs brought from Algiers in the spring of 1922. The former appears to be particularly happy and is already finding its way into many neighbours' gardens. Cuttings, taken off with a heel, root readily at any time of the year in a sandy compost and grow apace. Eranthemum pulchellum is quite easy to propagate, and its Gentian-blue flowers are lovely; but here it seems inclined to be a shy bloomer and apt to suffer on frosty nights.

A bed of varieties of Iris germanica is always interesting and instructive, and affords an opportunity of observing the influence of another climate on English-raised garden varieties. Lohengrin and Isoline, for example, which in England have a reputation of not flowering freely, never fail to give a dazzling display early in May. Whereas, Mr. Allan Grey sulked for three years before giving a flower, but then, it must be admitted, made glorious atonement.

A small bed devoted to Iris alata, I. reticulata, and I. Susiana is now glorious with the last species before finishing its work for the year. I. alata, which is widely distributed in the south of Spain, begins flowering here at the beginning of November, whereas I. reticulata is always unaccountably late, and has never yet produced a flower before the second week of February. Many of the Iris family prosper here, and a large group of I. tingitana, as happy as in its native habitat across the Straits, is in March always one of the glories of the Jardincito Japones, this year in lucky combination with a self-sown patch of pale lemon-coloured Tropaeolums.

In a neighbouring bed two groups of hybrid Hemerocallis are an interesting example of the different behaviour of two varieties under exactly identical conditions. Coming from the same nursery and planted on the same day at the end of October, within two feet of each other, one variety, Sir Michael Foster, has been flowering for the past three months, whereas, the other, Estonere, although what there is to be seen appears perfectly healthy, has made growth only about three inches high and produced two abortive flowers, coming out of the ground without stems like pallid Crocuses.

Down one side of the Jardincito and running rather more than half its length, a large bed is backed by pink Monthly Roses, almost the same tone as the flowering Judas Trees beyond, and Ornithogalum arabicum preparing to throw up its tall spikes of white, Apple-scented flowers. In front large groups of crimson Turban Ranunculus alternate with groups of Lilium candidum, relied upon to give scent and beauty in the middle of May, when the glory of the little garden is rapidly waning. In front an edging of Hyacinths, each bulb giving two, three and even four spikes, reveals the disconcerting habit of imported bulbs to grow into giants in their first season. Darwin Tulips, Caen Anemones, Arum Lilies, Iris albicans, Muscari Heavenly Blue more telling in colour, but less fragrant than its duskier indigenous relative with its perfume of ripe Greengages Antholyza, seven feet high, and a lovely yellow form of Iris Chamaeiris, growing among St. Brigid Anemones of clear blue and lilac tones, fill the little garden with scent and colour. A small Ochna multiflora, brought from the sheltered conditions of an English greenhouse three years ago, looks like taking heart after an exceptionally mild winter, and an imported Melianthus major with its exquisitely cut foliage, is putting forth its first flower in honour of Spring in Andalucia. *Christopher Sandeman, Jerez-de-la-Frontera, Spain.*

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

THUNBERGIA ALATA.

THIS half-hardy annual has long been popular for greenhouse decoration during the summer; the colours include white, pale yellow, and deep orange, with a dark eye. Seeds may be sown in a warm house from February to May. The seedlings should be pricked off singly into small pots, and in their younger stages may be pinched once or twice, especially if it is desired to grow them as specimens for the stages, in which case three plants may be placed in a six-inch or seven-inch pot. Such plants should be neatly staked and the shoots kept carefully trained and tied to them. If it is desired to train them up wires under the roof-glass, one plant in a pot will be sufficient for the purpose.

The successful cultivation of this plant presents no difficulty as it grows freely in any good potting compost; and, unlike many annuals, produces its flowers over a long period.

Beyond being somewhat subject to attacks of red spider, this plant does not usually suffer from insect attacks. *J. Coutts.*

INDOOR PLANTS.

DIEFFENBACHIAS.

DIEFFENBACHIAS have bold, handsome foliage, and they are most suitable for the decoration of the warm conservatory or for exhibition purposes. They look very attractive when placed amongst miscellaneous collections of plants and their robust constitution renders them invaluable for all kinds of decoration, for the foliage keeps fresh for a very long time and does not suffer or flag if the plants are hardened off gradually in a cool atmosphere a few days before they are required.

They need to be grown in a moist atmosphere and a temperature of about 65° to 70°, but when they have made their growth they may be hardened off in a temperature of about 60° to render them fit for decorative purposes.

In the autumn, when their lower leaves begin to drop, and the stem looks bare and unsightly, a good plan is to root the top by making an insertion about half way through the stem, just below the foliage that remains, and place a good quantity of Sphagnum-moss around the cut part. The Moss should be tied firmly around the stem and kept continually moist. Another plan is to break a 60-sized pot in halves, tie the two portions to the stem, supported by two or three sticks, and fill it with good fibrous peat, light turfy loam, and Sphagnum-moss mixed with silver sand. Keep the soil moist and the top will soon root, when it may be cut off, placed in a larger pot, and transferred to a warm frame or a close part of the house. For a short time, until it has made roots, the plants should be treated as an ordinary warm house subject. Shade the plants from the bright sun's rays. The top, when rooted and grown on will make a good specimen for the following season. The old stem may be placed in any out of the way corner of a warm house to make shoots suitable for use as cuttings. Young shoots will soon develop, and when strong enough may be taken off with a heel by cutting into the old stem. Place the cuttings singly in small pots and root them in a hand-light or frame provided with plenty of moist air and bottom heat. So soon as they are rooted shift them into larger pots as required. Be careful not to over pot them at any time, for if over potted, they will not grow or root freely.

Specimen plants when well rooted should be fed with liquid manure once weekly. Dieffenbachias should be grown in rich soil consisting of about two-thirds good, turfy loam, one-third fibrous peat or leaf-mould, with silver sand and a little decayed cow manure added. Well drain the pots with clean crocks, as the plant needs a moderate supply of water during the summer months, but not so much in the winter.

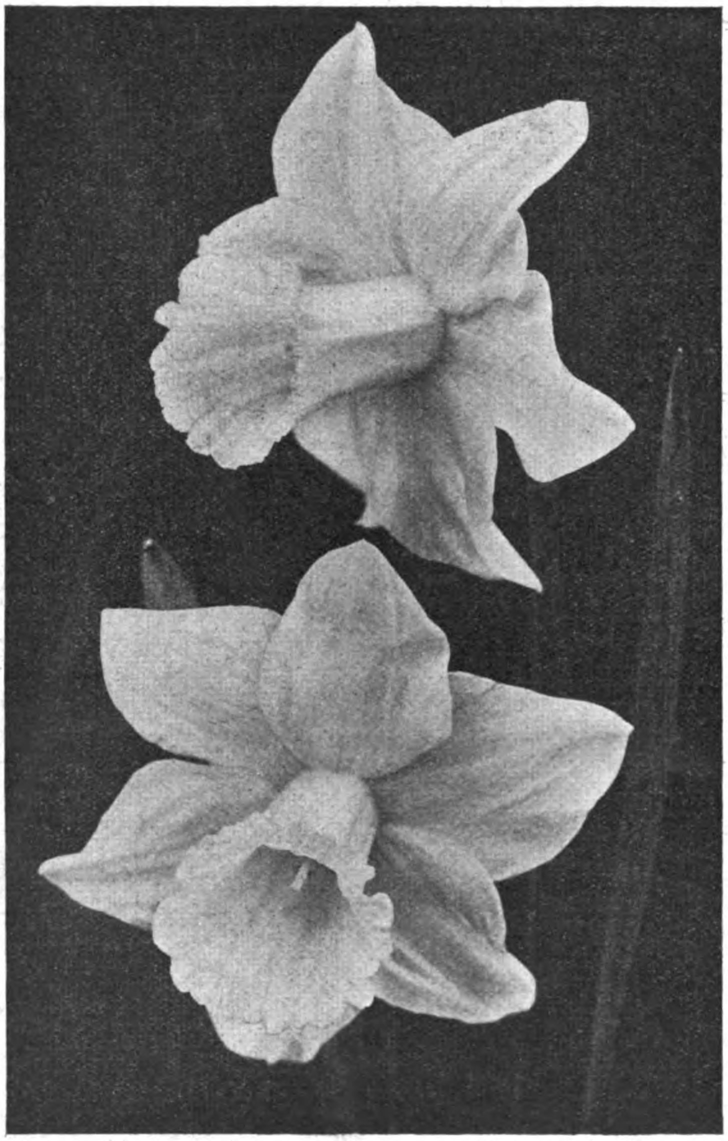

FIG. 153.—NARCISSUS BEERSHEBA.

R.H.S. Award of Merit, April 15. A beautiful white Trumpet variety raised by Rev. G. H. Engleheart, and exhibited by Mr. J. L. Richardson.

These plants are not subject to insect pests, although thrips will sometimes attack them. If large specimens are required, put three or four strong plants together in one pot and arrange them so they will make a specimen suitable for filling a large space in a collection of plants.

In taking the cuttings or potting the plants be careful not to allow the knife or tying material to go near the mouth, as a poisonous, acid juice produced by the plant gives intense pain and causes the tongue to swell so as to render speech impossible; I knew a gardener who was ill for a long time by accidentally putting the tying material in his mouth.

Dieffenbachias are natives of Central and South America.

The following are some of the best species and varieties, and those enumerated are distinct from each other. D. Jenmanii, a handsome species, with bold foliage banded and spotted with cream-white on a bright green ground; D. Pearcei, the large leaves of which have a broad, creamy-white mid-rib and irregular blotches of the same colour scattered over the surface; D. Rex, with deep green foliage thickly blotched with white markings; D. Leopoldii, the leaves of which are of a rich, deep lustrous, satiny green, each with a prominent white midrib; D. brasiliensis, a very handsome plant, the leaves averaging eighteen inches in length by eight inches to nine inches in width; D. imperialis, a fine, bold growing plant, with leaf blades an intense deep olive-green, irregularly blotched with creamy yellow and white, a very distinct and handsome species; D. illustris, a handsome plant for conservatory decoration or exhibition purposes; the ground colour of the leaves is dark green, irregularly blotched and mottled with white and yellowish-green; and D. amoena, an effective variety with oblong, acute leaves of a deep green, marked with abundant elongated blotches of white and pale yellow. *John Heal, V.M.H.*

ROYAL HORTICULTURAL SOCIETY.

EXHIBITION AT CHELSEA.

May 19, 20, 21, 22, and 23.

THE spring exhibition of the Royal Horticultural Society thoroughly maintains its reputation as the great horticultural exhibition of the year, and in some respects this reputation was enhanced by the show which opened on May 19 at the Royal Hospital Gardens, Chelsea, and closes on Saturday, May 23. The Council decided to extend the show from three days to five, and, not unnaturally, their decision met with some opposition from certain exhibitors, who contended that the extra two days would impose too severe a strain upon valuable plants Orchid growers were averse to the extended show time, and, consequently, some of these made smaller displays than usual, while others, notably Messrs. J. and A. McBean and Messrs. Armstrong and Brown, did not exhibit. Nevertheless, Orchids were once again a great and brilliant feature of the show, but Chelsea Show is coming to be more and more an exhibition of hardy plants. On this occasion, by far the larger part of the great area occupied by the display was filled with trees and shrubs—notably Rhododendrons and Azaleas—alpine plants and herbaceous plants, Tulips, Sweet Peas, rock gardens and formal gardens Other great attractions were the groups of Roses, Carnations, greenhouse plants, stove plants, and superb exhibits of fruits and vegetables. while to many, the scientific exhibits were of special interest, and others

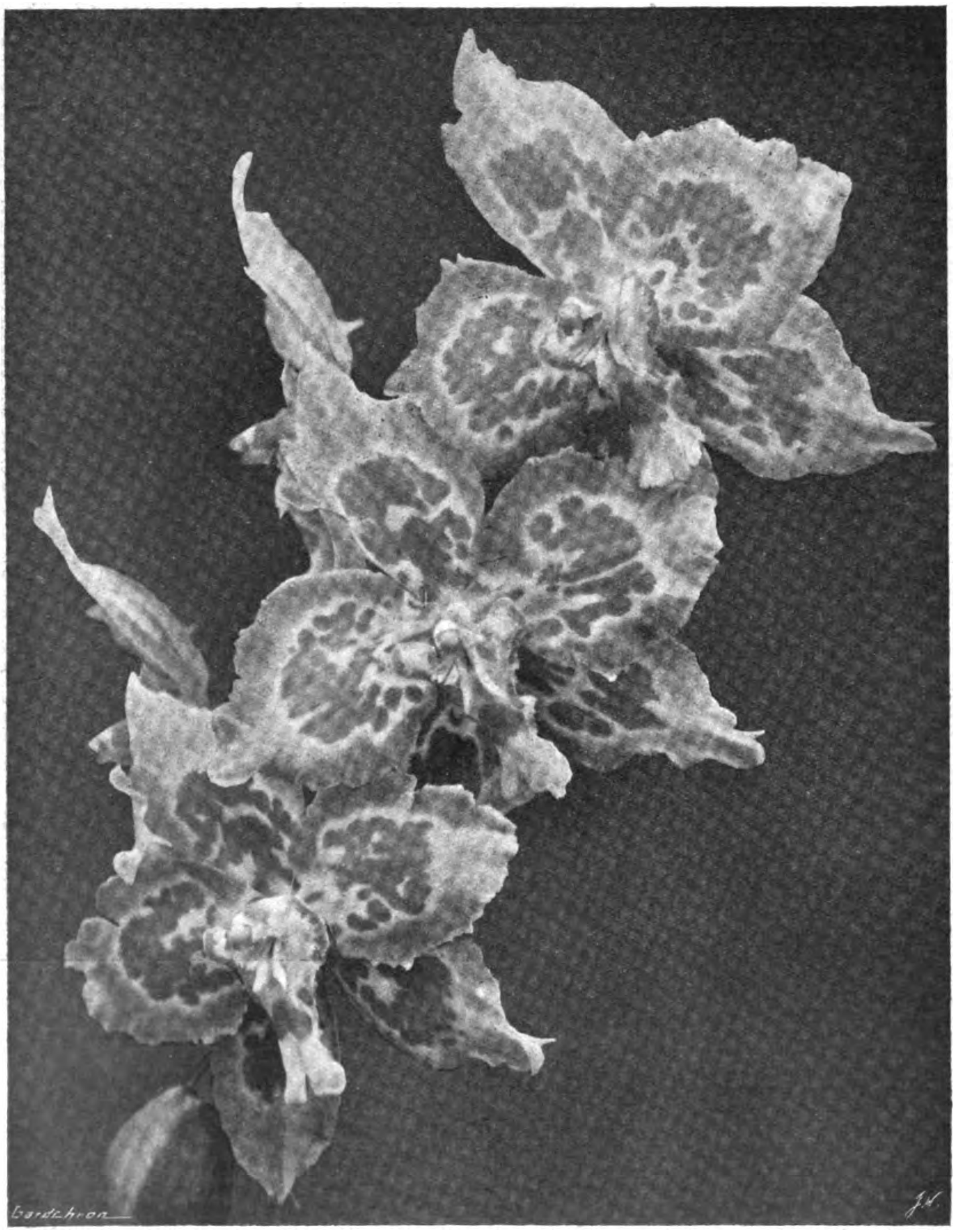

FIG. 154.—ODONTIODA CORA VAR. PRINCESS.

EXHIBITED BY MESSRS. CHARLESWORTH AND CO., AND GRANTED A CULTURAL CERTIFICATE AT THE CHELSEA SHOW.

found plenty of attraction in the many displays of garden sundries.

On the day preceeding the show the weather was sultry, but a thunderstorm, accompanied by fairly heavy rain, occurred throughout most of the metropolitan area that night. This had the effect of freshening up the outdoor exhibits, laying the dust, and cooling the atmosphere, consequently, when Their Majesties King George and Queen Mary visited the show early on the opening day they made the tour under pleasant atmospheric conditions. They were escorted by Lord Lambourne, the President, whom everyone was pleased to see had recovered from his recent indisposition; Mr. W. R. Dykes, Secretary, and several members of the Council. Their Majesties made a prolonged stay and were keenly interested in what they saw.

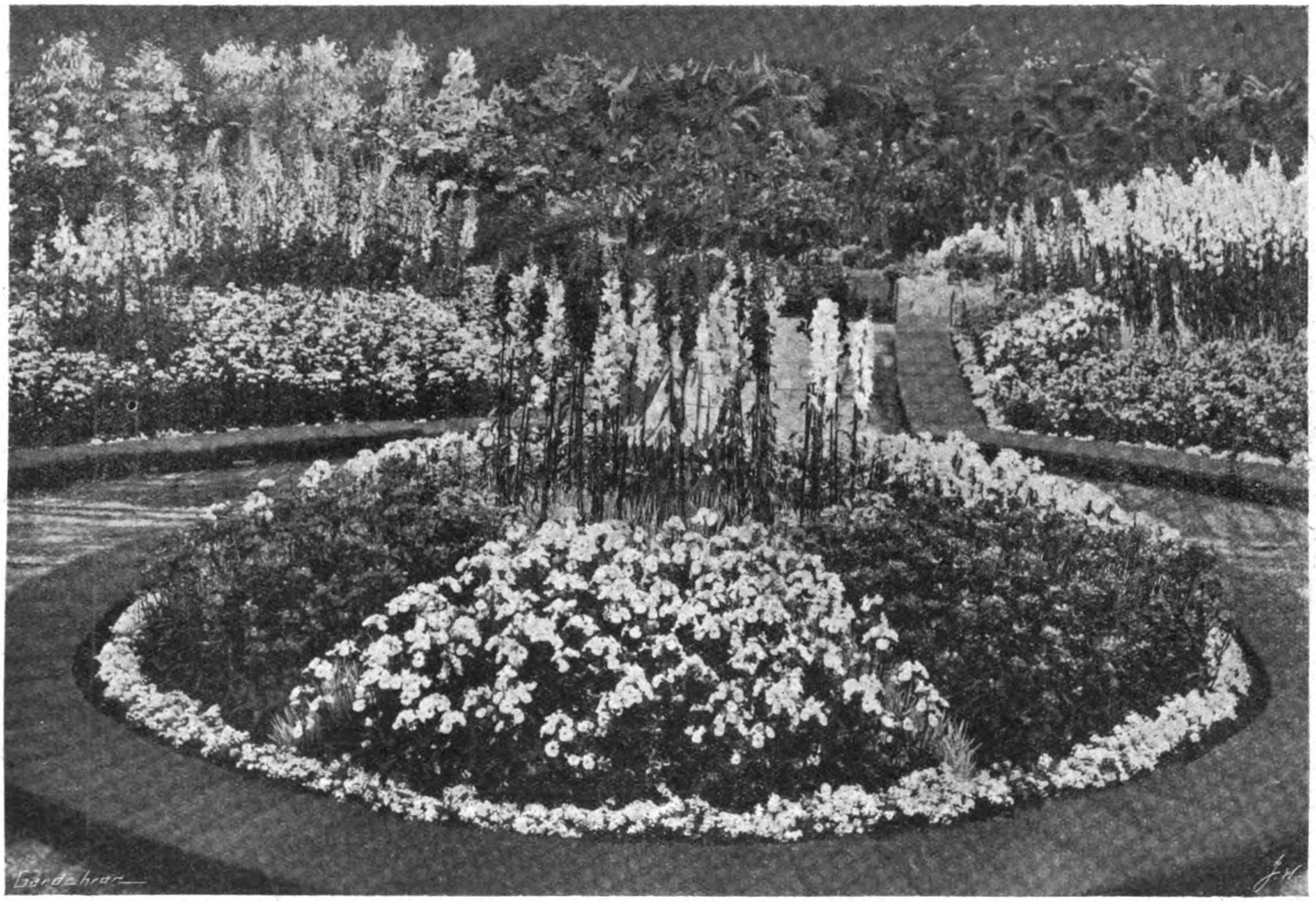

FIG. 155.—PART OF MESSRS. SUTTON AND SONS' EXHIBIT OF ANTIRRHINUMS AND ANNUAL FLOWERS AT THE CHELSEA SHOW.

The attendance on the opening day appeared to be large, and, fortunately, the weather was kind. Whether or not a five days' show proves a success in every way remains to be seen.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt., in the Chair; Mr. Gurney Wilson (Hon. Sec.), Messrs. J. O'Brien, C. J. Lucas, J. Cypher, F. W. Flory, W. H. Hatcher, Fred K. Sander, E. R. Ashton, Stuart H. Low, H. H. Smith, T. Armstrong, J. E. Shill, A. Dye, R. Brooman White, H. G. Alexander, G. F. Moore, C. Cookson, Chas. H. Curtis, A. McBean and John C. Cowan.

FIRST-CLASS CERTIFICATES.

Laelio-Cattleya Hassallii, Cowan's var.—A very fine form of the lovely hybrid between L.-C. Britannia alba and C. gigas Frau M. Beyrodt. The flowers are of large size, finely proportioned, and exquisitely beautiful. The sepals and petals are white; the lip has a cream-white tube; the front is rich purple with ruby-purple veining, the throat light yellow, with a narrow white margin. Shown by Messrs. COWAN AND Co.

Odontioda Hiawatha var. Royalty (*Charlesworthii* × *Coronation*).—This brilliant hybrid has medium-sized flowers with the segments prettily fringed. The ground colour is vivid coral-red and the margins blush coloured while the lip is of similar colouring to the sepals and petals. Shown by Messrs. CHARLESWORTH AND Co.

AWARDS OF MERIT.

Miltonia Princess Mary var. majalis.—A lovely form with the petals almost wholly of a deep rose-red colour, with a small blush apex; sepals stained rose-red at the basal half. Lip white, with rose shading and a red mask. Shown by Messrs. CHARLESWORTH AND Co.

Cattleya Chelsea (*Empress Frederick var. Vesuvius* × *General Pulteney*).—A grand Cattleya with big, broad sepals and petals of rich purplish-mauve colour; the very large lip has a beautifully frilled margin, and is of vivid ruby colour with gold markings in the throat. A splendid orchid. Shown by Messrs. FLORY AND BLACK.

Cymbidium Virgo var. Guinea (*Woodhamense* × *Pauwelsii*).—A particularly attractive hybrid bearing a large spike of eighteen bold flowers. The sepals and petals are golden green with deeper green lines; lip yellow with reddish spots and a red edging to the front part. Shown by Messrs. STUART LOW AND Co.

Odontioda Orestes var. majestica (*Oda. Coronation* × *Oda. percultum*).—In this pretty hybrid the large flowers are blush white, with light markings of soft chocolate-red, these last forming a pretty pattern over the centre of the flower. Lip white with golden disc and a few red spots at the base. Shown by Messrs. COWAN AND Co.

Cymbidium Victrix.—A showy hybrid with large, shapely flowers having clear yellowish-green sepals and petals and a lip of similar colour, edged with light brown. Shown by Messrs. SANDERS.

Cattleya suavior var. Hercules (*Mendelii* × *Aquinae*).—A very attractive Orchid and also an interesting one. The sepals are light mauve and the dorsal sepal has some light purple markings at the apex; petals very broad, fringed at the margins and with heavy staining of light purple at the tips. Shown by Messrs. STUART LOW AND Co.

Odontoglossum crispum var. Priscilla.—A grandly-formed flower and of large size. The broad, white petals have fringed margins and the sepals are also very broad and white.

with pale blush shading. Lip, white at the tip and golden at the base, and with two or three small red spots. Shown by ROBT. PATERSON, Esq., Stamperland House, Cathcart, Glasgow.

GROUPS.

Messrs. CHARLESWORTH AND Co. were among the largest exhibitors on this occasion, and they very ably upheld the high reputation enjoyed by this Haywards Heath firm. Their display was an extensive one and beautifully arranged, all the plants being set up in a way that displayed their beauty, with an admirable setting of Ferns and sheets of deep-green moss. The centre part of the exhibit consisted of a beautiful group of the firm's fine strains of Odontoglossum crispum xanthotes and O. eximium xanthotes. There were nearly one hundred spikes of these chaste and exquisite Orchids and in themselves they made a great display. The rest of the exhibit was composed very largely of fine examples of Odontiodas, Odontoglossums, Miltonias, Odontonias, Cymbidiums, and a few Cattleyas. A few outstanding plants and we can only mention a few of the good things shown—include Odontioda Cora var. Princess (Fig. 154) with nineteen flowers and buds, the blooms as big as a large Odontoglossum and heavily, but gracefully, marked with coral-red on a rose-pink ground; Oda. West Point Beauty, with a nine-branched spike carrying seventy-six deep rose-red flowers—a gorgeous spike representing the perfection of high culture; Oda. Thiasa, solid crimson with white markings on the lip; Oda. Brewii, also soft crimson, self-coloured; Oda. Hiawatha, deep carmine-red with blush margins; Oda. Dolosa, solid rich crimson with deep gold disc; Miltonia Princess Mary, with deep red-rose flushings on a white ground; M. Wm. Pitt, gorgeous in royal ruby, with a light gold mask edged with white; M. Charlesworthii var. Papillon, with a crimson mask and rose-blush ground colour; M. Reine Elizabeth, represented by fine varieties of this handsome hybrid, and the dainty M. Isabel Sander. Potienara Juliettae represented the multigeneric hybrids, and Coelogyne tomentosa, Oncidium Papillo, Cattleya citrina, Masdevallia Houtteana, Dendrodium atroviolaceum, and Phalaenopsis Rimestadiana represented the species of Orchids which are still beautiful and well worthy of more general cultivation. Odontonia Baroness Schröder was finely shown, the spike carrying nine beautiful flowers and buds. A few of the most striking Odontoglossums were O. Tagus, O. Princess Yolanda var. exquisitum, claret and white; O. Promerens, red and cream; O. Fabia, chocolate and white; and O. Harold, mauve and white. Brasso-Cattleya Apollo, Brasso-Laelio-Cattleya Jupiter, Laelio-Cattleya Fascinator, and B.-C. Queen of California ably represented the Cattleyoid section, but there were many other fine things in this wonderful group.

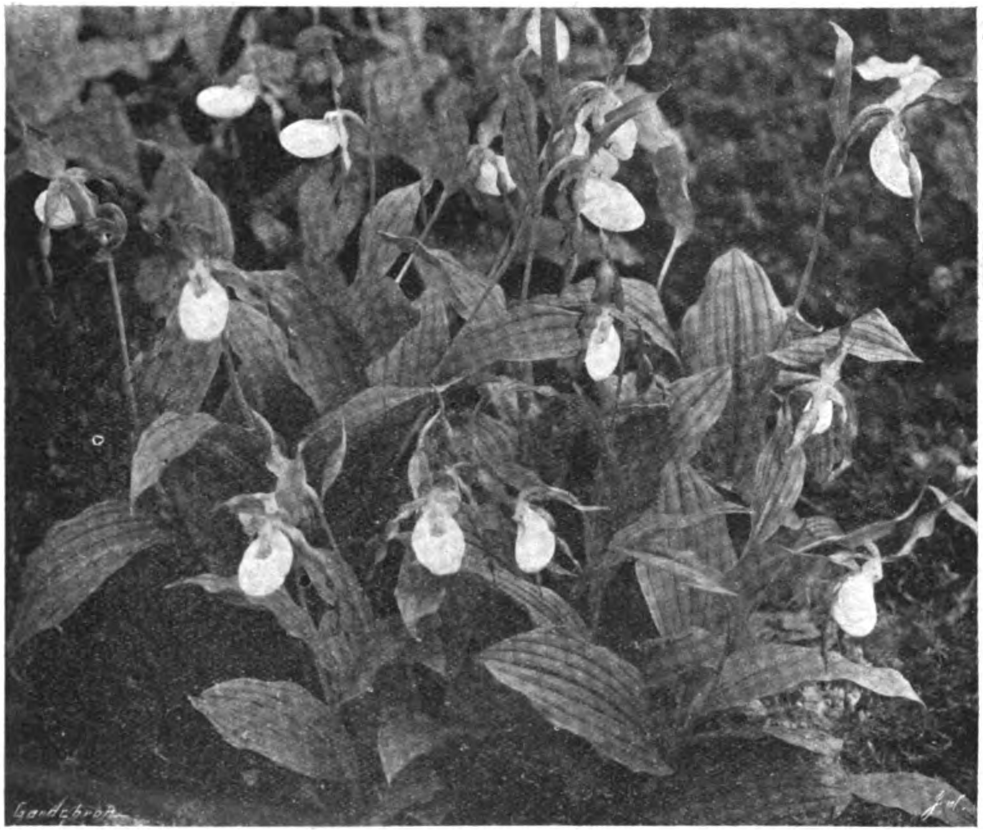

FIG. 156.—CYPRIPEDIUM PUBESCENS.

EXHIBITED BY A. C. BURRAGE, ESQ. (PRESIDENT, MASSACHUSETTS HORTICULTURAL SOCIETY) AT THE CHELSEA SHOW.

H. T PITT, Esq., contributed a very interesting, if comparatively small group of Orchids; Ansellia africana formed the centre-piece, with Oncidium Marshallianum and Odontoglossums as a background. Choice and rare plants included Maxillaria Sanderiana, Microstylis Scottiana, with green flowers and silvery variegated leaves; Bulbophyllum macrobulbon, with seven of its crimson-dotted, short-stemmed flowers; the handsome Miltonia Wm. Pitt; Oncidium insculptum, with its long, twining spike; Coelogyne tomentosa, with dependent, necklace-like spikes; Cypripedium Mrs. F. K. Sander; Renanthera Imschootiana; Miltonia Phalaenopsis, in fine condition, and many other good things.

A pleasing group of Orchids submitted by Messrs. MANSELL AND HATCHER, was notable for its numerous good examples of Laelio-Cattleya Fascinator, some capital varieties of the good old Laelia purpurata and excellent specimens of Miltonia Hyeana. In the foreground were Miltonia vexillaria var. Lyoth, the chaste Cattleya The Bride and C. Helen Langley; a selection of Odontiodas, hybrid Odontoglossums and other handsome things. Species were represented by Cypripedium concolor, the tiny Masdevallia O'Brieniana and Miltonia Phalaenopsis.

A pretty group was exhibited by Messrs. STUART LOW AND Co., and in this the background consisted of Oncidium Edwardii, hybrid Cymbidiums, Oncidium McBeanianum, the rare O. superbiens, Renanthera Imschootiana and branching Odontiodas. Ansellia africana and Cymbidium Lowianum filled the centre and other good things along the flanks of the group included some choice Dendrobiums—D. nobile album, very prominent, the gloriously coloured Laelio-Cattleya G. S. Ball, Odontoglossum Rosina, the pendulous Cattleya citrina, Cochlioda Noetzliana—parent of a host of fine Orchids; the gigantic Brasso-Laelio-Cattleya Decia, with a huge, deep purple lip—the blooms eleven inches across; Dendrobium Brymerianum, D. atro-violaceum and D. densiflorum. A very interesting display.

Messrs. SANDER'S small exhibit contained pleasing examples of Miltonia Butterfly, M. Ture Mellstrom, M. Moonlight, and the broad-flowered M. Rose Queen. With these were Odontioda Grenadier, Oda. Chanticler, and a big, branching spike of Oda. Queen Mary, with medium-sized scarlet and blush flowers; and Cymbidium Devonianum with a pair of drooping spikes.

Mr. HARRY DIXON had an attractive exhibit in which no plant jostled its neighbour. Miltonias were well represented, as also were Cymbidiums and the tall Ansellia africana. In the plants forming the foreground we noticed Brasso-Cattleya Gatton Lily, B.-C. Veitchii (the original hybrid of this group), B.-C. Apollo, Odentioda Vuylstekeae, Cypripedium callosum Sanderae, C. Curtisii Sanderae, the lovely and fragrant Cattleya Schröderae, etc.

Messrs. FLORY AND BLACK confined their attention very largely to Cattleya and made a brave show. Particularly fine were their examples of the new Cattleya Chelsea (Empress Frederick var. Vesuvius × General Pulteney), with a huge ruby-purple lip and mauve sepals and petals; the pure white C. The Bride; C. G. P. Walker, C. Irene, a delightful cross between C. Wagneri and C. Suzanne Hye de Crom; C. Tityus, C. Thurgoodiana, and C. Heatherwood. A few fine Miltonias completed this handsome display.

Messrs. COWAN AND Co.'s contribution was bright with Oncidium Marshallianum and Cymbidiums, these forming a graceful background for the vivid Odontioda Murillo and O. Grenadier, Dendrobium atro-violaceum, some finely-grown hybrid Odontoglossums, glorious plants of Laelio-Cattleya Hassallii Cowan's var., and Brasso-Laelio-Cattleya Jupiter, each of these carrying a pair of magnificent blooms.

As usual, Messrs. JOHN CYPHER AND SONS set up a pleasing exhibit, containing a great variety of Orchids, and these were set up in pleasing fashion. With the Brasso-Cattleyas, hybrid Cattleyas, and Odontoglossums, this firm associated such interesting subjects as Cypripedium macrochilum giganteum, with tail-like petals nearly eighteen-inches long; Epidendrum gattonense, with heads of bright orange-coloured flowers; a mass of the brilliant Masdevallia Veitchiana, Ada aurantiaca, Cypripedium Maudiae, Dendrobium infundibulum, and Anguloa Clowesii.

Sir JEREMIAH COLMAN, Bt. (gr. Mr. J. Collier), Gatton Park, Reigate, filled a corner space with an attractive and very interesting display of Orchids. Hybrid Cymbidiums and some capital Dendrobiums were used in admirable fashion as a background for the lower-growing subjects. The Gatton Lycastes were to the fore, and Mr. Collier informed us that some of the plants had been in flower continuously since November last. Some fine old species were shown, and a few of these were the wierd Lycaste locusta, the dwarf, green-flowered Stelis parvula; Cattleya citrina, Cypripedium Chamberlainianum, the quaint Eria ornata, with three spikes; Zygopetalum Perrenoudii, Odontoglossum citrosmum—rarely seen now-a-days; Vanda suavis, Polystachya lutescens, Cypripedium Godefroyae, Masdevallia coradella, M. Troglodytes, and Cirrhopetalum picturatum.

A very interesting exhibit, and also a large one, consisted of terrestrial Orchids exhibited by Mr. Burrage, the President of the Massachussetts Horticultural Society. The dormant tubers were sent over in cold storage and grown by Mr. Wood at Warren House Gardens, Hayes. The plants were big clumps in boxes, and together formed a fine exhibit, backed by Pines, and set in moss. Some of the finest examples were of Cypripedium pubescens (Fig. 156); C. parviflora, C. acaule (very fine); C. spectabile; the wee white and rose C. arietinum, a small and miffy grower, rarely seen. There were altogether about sixty clumps of these Orchids, and one specimen of C. spectabile was the finest we have ever seen.

Floral Committee.

Section A.—*Present:* Messrs. Henry B. May (in the Chair), Arthur Turner, Hugh Dickson, W. B. Gingell, Andrew Ireland, J. B. Riding, Chas. E. Pearson, W. N. Page, F. E. Cousins, F. Streeter, D. B. Crane, Donald Allan, H. R. Darlington and W. D. Cartwright (Sec.).

Section B.—*Present:* Messrs. W. J. Bean (in the Chair), Jas. Hudson, G. Reuthe, Geo. Harrow, G. Yeld, F. G. Preston, Amos Perry, C. Williams, E. H. Wilding, Arthur Bedford, R. C. Notcutt, R. D. Trotter, R. W. Wallace, A. G. Jackman, and W. B. Cranfield.

First-Class Certificate.

Paeonia obovata alba.—A most delightfully beautiful single Paeony with large, glistening white blooms of excellent form; they are just over five inches wide and composed of seven segments, one of these appearing to be an extra one tucked in to keep the others firm. The plant is herbaceous and has trifoliate leaves, each of the lobes being also trilobate, of a deep green colour, slightly glaucous and paler on the underside. It is a native of Hupeh and was collected by Mr. E. H. Wilson. Shown by Mr. J. C. Allgrove.

Awards of Merit.

Rose Superba.—A dwarf, perpetual-flowering polyantha variety, about two feet high as shown. The blooms are double, borne in pleasing clusters and of a rich, crimson-scarlet colour, with a little rose shading here and there. Shown by Messrs. Wm. Cutbush and Son, Barnet.

Rhododendron Gill's Glorious.—A big-flowered variety of clear pink colouring; the flowers are borne in a big truss and suggest a glorified Pink Pearl. Shown by Messrs. R. Gill and Son.

Azalea Coquette.—A charming hardy Azalea and a very free bloomer. The colour is lively pink with the broad lower segment of soft citron-yellow colour. Shown by the Exors. of Mr. Anthony Waterer, Knap Hill.

Azalea Mary Waterer.—The flowers of this delightful hardy Azalea are soft white, flattened, and carried in compact terminal trusses. A beautiful plant. Shown by the Exors. of Mr. Anthony Waterer.

Azalea Marion Merriman.—A handsome and very showy variety of the mollis type, but with rather flattish flowers of a golden colour, with orange staining on the three lower segments. Shown by the Exors. of Mr. Anthony Waterer.

Diosma uniflora—A shrubby plant about a yard high, with its stems amply clothed with small, green leaves, dotted with brown on the underside. The solitary terminal flowers are about an inch-and-a-quarter wide, white, with a central red line on the lower half of each petal. Shown by the Rev. A. T. Boscawen, Ludgvan.

Telopia oreades.—A handsome Proteaceous plant. The flowers are carried in terminal heads, and their chief attraction is a recurved corolla, and a prominent style and stigma. The colour is deep red. Shown by the Rev. A. T. Boscawen, Ludgvan, Cornwall.

Rhododendron Goldsworth Yellow.—This has medium-sized trusses of pale cream-yellow flowers. As shown the blooms were not of the brilliance the name might suggest. Shown by Mr. W. C. Slocock, Woking.

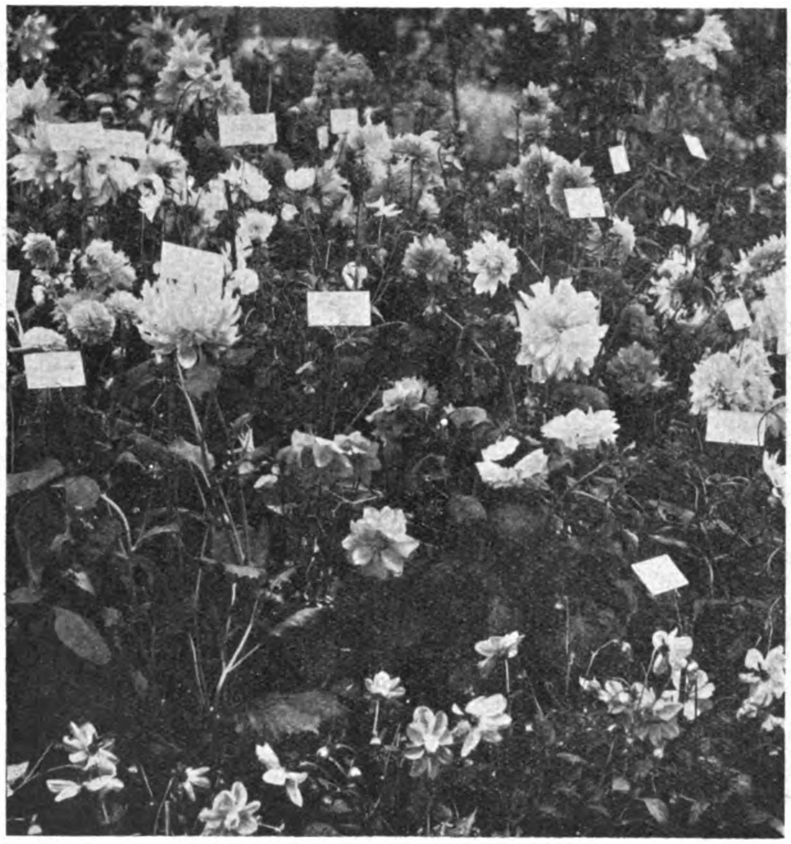

FIG. 157.—DAHLIAS EXHIBITED AT CHELSEA SHOW BY MESSRS. CARTER PAGE AND CO.

Carnation Red Laddie.—A lovely Carnation of large size and capital form. The colour is deep salmon-cerise rather than red as this latter colour is understood. Shown by Mr. C. Engelmann, Saffron Walden.

Anemone sylvestris var. Spring Beauty.—A charming variety with pure white flowers of goodly size, and a central cluster of golden stamens. Shown by Messrs Gavin Jones and Ingwerson, Letchworth.

Rhododendron Tittenhurst Belle (Aucklandii × seedling from Corona).—An exquisitely lovely Rhododendron with widely expanded flowers about three-and-a-half inches across, and of the most delightful shade of soft rich pink imaginable. Shown by T. N. Lowinsky, Esq.

Rhododendron A. Gilbert.—The broadly campanulate flowers are soft, creamy pink, and very charming. Shown by T. N. Lowinsky, Esq., Tittenhurst, Sunninghill.

Rhododendron ledoides.—A dainty little species, with terminal heads of tiny, white flowers—the small plant shown was very like a Daphne. Shown by Mr. A. K. Bulley, Neston.

Primula nivalis.—A sturdy-growing plant collected by Mr. F. Kingdon Ward. The long, strap-shaped leaves are greyish-green, with paler mid-rib and base. The peduncle is about a foot high, carrying an umbel of Forget-me-Not blue flowers, each half-an-inch wide, and with a white eye. Shown by Mr. A. K. Bulley.

Staphylea holocarpa.—This pretty shrubby plant has small, dainty, blush-pink flowers borne in axillary racemes, usually eight blooms on a raceme, and the inflorescences are produced abundantly on the twiggy growths. Shown by Lt.-Col. Sir George Holford (gr. Mr. Clarke), Westonbirt, Tetbury.

Berberis Farrer, No. 359.—A small-flowered, unnamed species, bearing its tiny, golden flowers in dense racemes, which are about an inch-and-a-half long. The racemes are freely produced along the arching growths. Shown by Lt.-Col. Sir George Holford.

Rhododendron J. H. van Nes.—The broad flowers of this handsome variety are of soft salmon-pink colouring, with paler pink centre. Shown by Messrs. C. J. van Nes and Sons, Boskoop, Helland.

Azalea Mary (malvatica × Kaempferi).—A dwarf, free-flowering hybrid. The flowers are brilliant pink, and the plant is smothered with them. Shown by Messrs. C. J. van Nes and Sons.

Botanical Certificate.

Doryanthus Palmeri.—This, exhibited by Commendatore Cecil Hanbury (gr. Mr. S. W. M. Braggins), La Mortola, was of considerable interest. It is about fourteen feet high, and has an arching spike of deep scarlet flowers, closely set along the upper part of the spike.

The same exhibitor sent some lovely seedlings of Gerbera (nearly four days out of water), which included several fine colour forms, especially the rich yellow, deep pink, and wine colour.

Stove and Greenhouse Plants.

An imposing group of stove plants of the highest merit was arranged by Messrs. L. R. **RUSSELL, LTD.**, in the Orchid tent. They displayed perfect plants of Medinilla magnifica bearing very large, pendulous bunches of flowers, Anthurium Scherzerianum varieties, including Madame Dalliere; A. Veitchii, with large, glossy leaves; Crotons Warrenii, Thomsonii, Baron Compt, splendens, Wiesmannii, Edmontoniensis and Reidii; Dracaenas (Cordyline) Pére Charon, of rich, crimson colour, and Victoria as tall specimens well furnished with leaves and Hoya carnosa, an old favourite greenhouse climber, bearing its fragrant flowers. Caladiums were represented by fine plants of Flora Russell, Emperor Alexander III., William Rappard, Thomas Tomlinson, Rose Laing, and Rising Sun, Cyanophyllum magnificum, Alpinia Sanderiana Gloriosa Rothschildiana, Aralia Veitchii, Clerodendron Thompsonii, a dwarf form of C. Balfouri, which flowers in quite small pots, and Drosera pinnata, are the names of only a few of the splendid plants they grouped so well. At one end of the tent Messrs. **RUSSELL** placed a perfect plant of Dicksonia antartica and of another Nephrolepis exaltata.

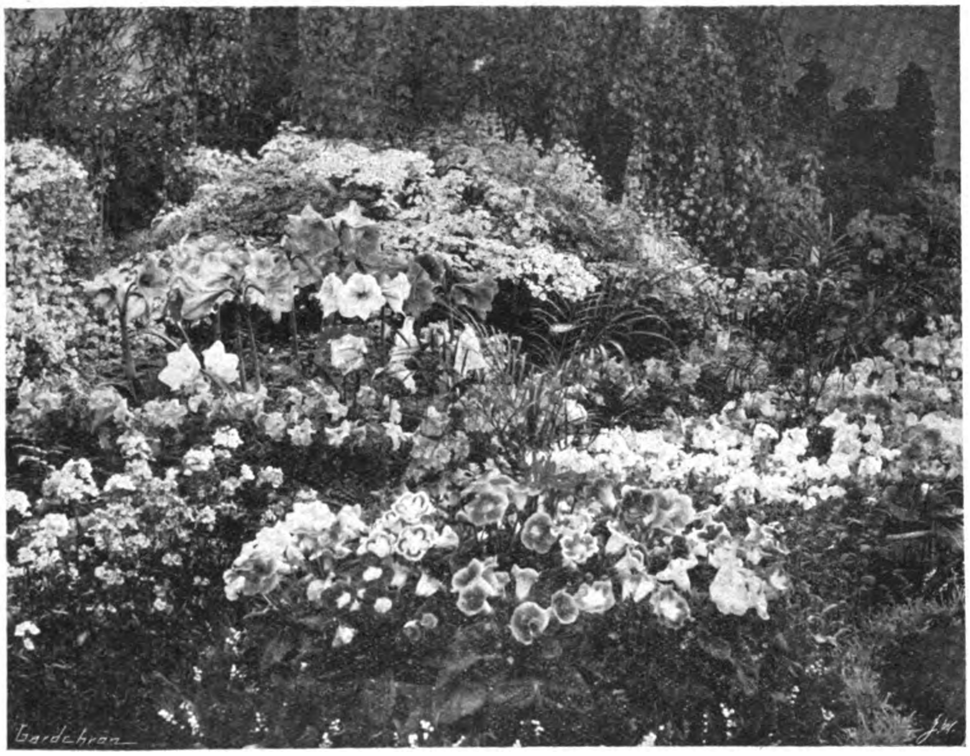

FIG. 158.—PART OF MESSRS. JAMES CARTER AND CO.'S EXHIBIT OF GLOXINIAS, AMARYLLIS, AND OTHER GREENHOUSE PLANTS AT THE CHELSEA SHOW.

A small but interesting collection of Cacti and Succulents was arranged by Mr. **SYDNEY SMITH**. His principal plants were of Echinocactus Grusonii, E. bicolor Bolansis, Opuntia robusta, O. senilis, Mamillaria pusilla, M. Wildiana, Echinocactus denudatus, E. platensis, E. acutissimus cristata, E. horizonthalonius, Gasteria verrucosa, G. nigricans marmorata, Haworthia papilosa, and Euphorbia cereiformis. There were also many Sedums and Mesembryanthemums.

An especially fascinating group of Caladiums was set up by **HENRY P. BRANDT**, Esq. (gr. Mr. H. Cook), Capenor, Nutfield, Surrey. Not only were the many plants superbly grown, but the arrangement of the group was very delightful. The central mound was composed of red-leaved varieties, such as Mikado, John Peed, Triomphe de l'Exposition, and Mrs. L. R. Russell. Secondary mounds contained Guil Mar, Candidum, Angustura, and Rose Laing. Other splendid varieties were Pallis and Itapocii, of almost transparent, blood-red colour; Pantia Ralli Improved, deep crimson with light spots, and Marquess of Camden, green, with white spots and red veins. The group was edged with Pilea muscosa and Caladiums argyrites and minus erubescens, with an occasional plant of a brilliant colour, which gave just the needed touch of brightness.

A number of novelties were included by Messrs. **JOHN PEED AND SON** in their excellent group of Caladiums. The chief of them were Arcol, a vigorous, dwarf variety, bearing deep crimson leaves spotted with white and, occasionally blood red. Dark Rio is a darker form of Rio de Janeiro, and has semi-transparent leaves of deep crimson, marbled, and veined with green and white. Diadanus is a strong-growing variety, which produces large, creamy leaves with plentiful blotches of transparent crimson. General Hamilton, another vigorous plant, has leaves of bright crimson colour with deeper coloured veins and white spots. Killarney bears long, tapering, green leaves spotted with white and pink. Moonlight is a charming, transparent variety, splashed and marbled with yellowish-green Rosetta has a crimson-ground colour, splashed with deeper crimson and flushed with rose. Adjoining these lovely Caladiums they showed a splendid strain of Streptocarpus, Hydrangeas, and a good, blue Petunia.

In the Orchid Tent Messrs. **ROBERT GREEN, LTD.**, arranged a large group of excellent Palms. The tallest examples included Kentia Dumoriana, Chamaerops Histrix, and Kentia Fosteriana, with long elegant leaves. The dwarfer sorts included decorative species of Cocus Wedelliana, Phoenix Roebelinii, Caryota sobolifera, Attalea spectabilis, Chamercps Fortunei, Coryphra australis and Chamaerops humilis arborescens.

Adjoining their Carnations Messrs. **STUART LOW AND CO.** displayed some profusely flowered Mimosas, the Bottle Brush tree (Metrosideros floribunda), Eutaxia myrtifolia, Hydrangeas, Hippeastrums, Anthuriums with immense spathes and other interesting plants. On the floor Messrs. **STUART LOW & CO.** showed masses of bloom of Acacia pendula, bordered with Boronia heterophylla, while a companion group was composed of Metrosideros floribunda and Erica persoluta alba. Both were very charming little groups.

Cut trusses of Zonal Palargoniums were staged by Messrs. **JARMAN & CO.** The singles included Arabic, scarlet; Queenswood, salmon-pink; Cymria, purple; E. Hookey, orange-scarlet; Mars, deep scarlet, and General Wolesley, rich scarlet. Amongst the doubles there were Pasteur, apple-blossom pink; Achievement, deep pink; Lane, orange-yellow, and Dr. A. Vialettes, deep rose.

What was probably the finest exhibit of Hydrangeas that has ever been seen was arranged by Mr. H. J. **JONES**. An immense number of plants was used, and these, illustrating practically all the best varieties, bore very large heads of flowers of very beautiful colours. As an example of cultural skill this collection was worthy of the highest praise. and it was especially valuable in that it included all the very best varieties. Space does not permit mention of all, but we selected the following as being particularly meritorious. Mrs. H. J. Jones, a French variety of dwarf compact habit, bearing immense trusses of Dresden china pink tipped with cream; Matador, bearing large pips of brilliant rose-pink colour; Sensation, a vigorous variety bearing cup-shaped flowers of rosy mauve colour; Peer Gynt, a rich reddish rose variety; Pasteur has deep pink flowers tipped with white; Ideal has very compact trusses of glowing pink flowers; Goliath is one of largest Hydrangeas and of a satisfactory shade of medium pink; Blue Prince is not a blue but has flowers of an uncommon reddish colour.

Roses.

The most pretentious exhibit of Roses was made by Mr. E. J. **HICKS**, of Twyford, who filled the end of one of the large marquees with a semi-circular group. It made an exceedingly effective display. At the back tall Rambler varieties contributed a wealth of bright blossoms, including the richly coloured Paul's Scarlet Climber, which was represented by a large number of plants. Toward the centre of the exhibit were finely flowered pot plants of Molly Sharman Crawford and America, with a tall standard of Hiawatha in the middle. Other beautiful Roses displayed by this exhibitor were Mrs. George Norwood, Sensation, Mme. Butterfly, Golden Ophelia, Mrs. Elisha Hicks, one of the most fragrant of all modern Roses; Premier, Clovelly, and Betty Uprichard. These were arranged in a bed of Polyantha varieties, which were also utilised as an edging to the group.

Mr. **GEORGE PRINCE**, Oxford, had many beautiful Roses in a tastefully arranged exhibit on a stage. Hoosier Beauty was exceptionally good, while the fine Polyantha variety Edith Cavell made a pretty centre piece. Mme. Butterfly, America, Souvenir de Claudius Pernet, and Sensation, the last a new variety of dark velvety-crimson, were the best of the large blooms.

The Rev. J. H. **PEMBERTON** showed some very dainty Polyantha Roses, including several novelties. A pretty rosy-pink variety named Girlie, and Topsy, a sport from Edith Cavell, a deep red colour, were both very attractive. Chatillon Rose, which is pink with a white eye, is an exceedingly pretty cluster Rose, and others that deserve mention are Echo, a variety of soft pink shade with relatively large blooms, and an albino form of this sort named White Echo.

Messrs. W. **Cutbush and Son**, Highgate, made their usual effective exhibit of Roses, principally Polyantha varieties, making a feature of the new Salmon Queen variety. A few standards were included, those of Excelsa being outstandingly good.

Messrs. **Paul**, Waltham Cross, were the exhibitors of Roses, their display taking the form of a triangular group, part of a scheme of flower beds. Richmond, Lady Hillingdon, Mrs. Tresham Gilbey, Golden Ophelia, Los Angeles, and William Bower are a few sorts of merit in this collection.

Messrs. **Allens**, Norwich, put up a grand corner group of Roses, the exhibit forming one of four triangular-shaped beds in which Messrs. **Carter Page**'s circular group of Dahlias formed the centre piece (Fig. 157). The group of Roses was very effective and the plants splendidly flowered. Most notable were the tall pillar varieties, Minnehaha, Papa Gouchault, White Dorothy, Havering Rambler (very fine), Fernand Rabier, and others. These were set in a group of dwarfer Roses in pots, principally of the polyantha type. Of the larger bloomed varieties Souvenir de Claudius Pernet, and Mrs. Beckwick, two glorious golden-yellow varieties were notably conspicuous, and others shown well were Covent Garden, Souvenir de Georges Pernet, Ophelia, K.-of-K., and Liberty.

Messrs. **Frank Cant and Co.**, Colchester, put up a group of Roses against a background of black velvet, so that the blooms showed effectively. The back of the group was arranged with tall Pillar Roses, flowering freely, and the introduction of a few standards of Polyantha varieties towards the front gave pleasing relief. Pot specimens of Lord Charlemont, Mrs. Harvey Cant, Capt. Harvey Cant, Mrs. Wemyss Quinn, Mrs. Henry Bowles, Admiration and Lady Roundway in the body of the exhibit were all of excellent quality.

Mr. **Chas. Turner**, Slough, arranged a bed of Roses in association with the white Rhododendrons Beadonii, exoniensis and Purity. Polyantha Roses in pots were grouped in the front of the exhibit and in the centre were tall standards of such sorts as J. B. Clark, Ellen Poulsen, General McArthur and Paul's Scarlet Climber.

Messrs. B. R. **Cant and Sons**, Colchester, showed a bank of fine Roses on a side stage, a glorious group of rich colours. The specimen blooms were very fine, notably Souvenir de Claudius Pernet, America, Hoosier Beauty, Mrs. Beatty, Covent Garden, Columbia, Constance Casson and Madame Butterfly.

Carnations.

Messrs. **Allwood Bros.** Hayward's Heath, showed Carnations and Dianthus Allwoodii as a group of imposing size and highly decorative in effect. It took the form of a central, massed collection, separated by a broad gravel path from beds of artistic shape made in grass, and these outer beds were planted with varieties of perpetual-border Carnations, the ordinary border type, and the firm's strain of Dianthus Allwoodii, of which there were several improved sorts. Of the indoor flowers a vase of the pink Laddie at one corner, in a handsome enamelled vase, at once arrested attention, and the other corner pieces were equally good, Chintz, Jessie Allwood, and Topsy being the sorts employed. The exhibit had, as a tall centre-piece, a massive column of the rich scarlet Edward Allwood, set in Palms and Ferns as foils. Other specially notable sorts were Shot Silk, terra-cotta flaked red; Beauty of Durham, a glorious flower of glowing salmon shade; and Coral Glow, new. New varieties of merit of Dianthus Allwoodii are Phoebe, salmon-red, and Ann, white with crimson markings in the centre. The perpetual border sorts were shown in a variety of most popular colours, and are fine subjects for garden decoration.

Mr. C. **Engelmann**, Saffron Walden, showed an enormous number of Carnations as a corner group in one of the large marquees. In all there were some eighteen thousand blooms and the quality throughout was excellent. Many of the sorts were displayed in big masses, the more notable varieties being Red Laddie, Tarzan, Enchantress Supreme, Aviator, Lady Northcliffe, Peerless, and Saffron. In some cases two varieties were arranged together in great columns, for instance, Lady Northcliffe and Topsy; Saffron and Nigger; White Enchantress and Donald; and the effect was very good.

Messrs. **Stuart Low and Co.**, Enfield, contributed an imposing exhibit of Carnations, arranged in fine style, dainty hanging baskets suspended from arching iron supports, filled with bright blooms contributed to a very successful effort. The more notable sorts were Arnos Grove, Topsy, Eileen Low, White Wonder, Saffron, and Mrs. Hamilton Fellowes.

Messrs. **Lowe and Gibson**, Crawley Down, showed several varieties of border Carnations, including the novelties Mrs. J. L. Gibson, chrome-yellow marked with heliotrope, Mary Murray, yellow, Mrs. Norman Cox, a violet purple self, and Joan Wardall, glowing crimson.

Mr. **Keith**, Luxford, Harlow, contributed a big group of perpetual-flowering Carnations, of such sorts as Peerless, Enchantress Supreme, Mrs. Walter Hemus, Mikado, and Surprise.

One of the largest groups of Carnations was shown as an end exhibit near the entrance of one of the marquees by the Executors of Sir W. **Cain**, Bt., Wargrave Manor (gr. Mr. C. Moore). It was a group entirely of pot plants, all flowering abundantly, the centre of the exhibit consisting of a big group of Princess of Wales variety, and on either side of this were smaller groups of mixed seedling varieties, with circular groups of Cecilia, a glorious yellow Carnation; and an oval group of the old blush Malmaison variety in the foreground.

Mr. J. **Douglas**, Great Bookham, was the exhibitor of superb Carnations of the border type. The glorious form, rich colour, and strong perfume of these delightful hardy Carnations appeal to all lovers of flowers. In such a modern collection it is difficult to pick and choose, but we may mention a few—Royal Scot, Highland Mary, Rhoderic Dhu, Rose Clove, Gleam, Grey Douglas, Steerforth Clove, and Virginia.

F. W. **Seymour**, Esq., Finchley (gr. Mr. H. Worthington), exhibited varieties of border Carnations set up very prettily in vases with Adiantum Fern and greenery.

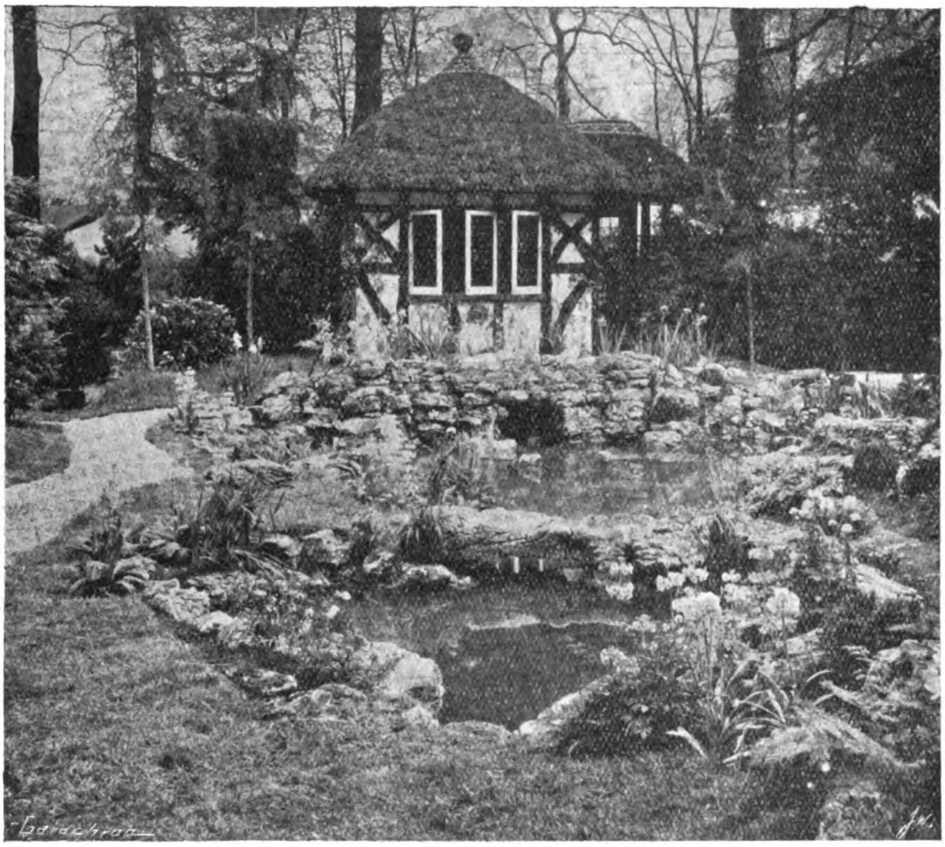

FIG. 159.—MESSRS. R. W. WALLACE AND CO.'S GARDEN AND TEA HOUSE AT CHELSEA SHOW.

Begonias.

Messrs. **Blackmore and Langdon** had their group of excellent double-flowered, tuberous Begonias, which are instinctively associated with Chelsea. As ever, the blooms were exceedingly large yet of the highest quality. A selection of the new varieties would include Lord Lambourne, rich orange, flushed on the outside with salmon; Mrs. T. Crawford, frilled pink; J. W. Pigman, rich crimson; Mrs. D. B. Crane, blush; Mrs. J. Davidson, rich yellow; Mrs. Hugh Moncrieff, frilled pink; and Mona, white. The basket varieties were Gladys, Lettie, and Stella.

Irises.

It would be difficult to exaggerate the beauty of the collection of Irises from Messrs. G. **Bunyard** & Co., Maidstone, and the tasteful manner in which they were exhibited reflected great credit on the firm. Amongst the many varieties included, particular mention may be made of Ambassadeur, Alcazar, Corrida, Crusader, and Prospero, while Hoogiana, and Richard II. were much admired amongst the dwarfer types.

Two beds of Irises, edged with Box, were shown by Messrs. Wallace, Tunbridge Wells, and they were so arranged as to look quite natural. Amongst the many varieties of German Irises shown, Magnifica, Miranda, Kashmir White, Ann Page, and Lord of June came in for a good deal of attention.

Ferns.

In a corner of the tent Mr. Amos Perry found an appropriate place for his excellent hardy Ferns. These were arranged as nearly in the manner of a low Fern rockery as circumstances permitted. The large plants included Lastrea pseudo-Mas, Osmunda regalis purpurascens, Polystichum angulare, P. a. divisilobum plumosum, of feathery, foamy greenness; P. a. d. plumosum, beautifully crested; Osmunda cinnamomea, bearing long, bright buff "flowers"; and Osmunda regalis cristata. Associated with these superb Ferns were some interesting and beautiful Irises, Watsonia Ardernei, Saxifraga Snow White, various Primulas Dodecatheon Meadia, Arum Dracunculus, Cypripedium pubescens, and various lovely alpines, making a very fascinating exhibit.

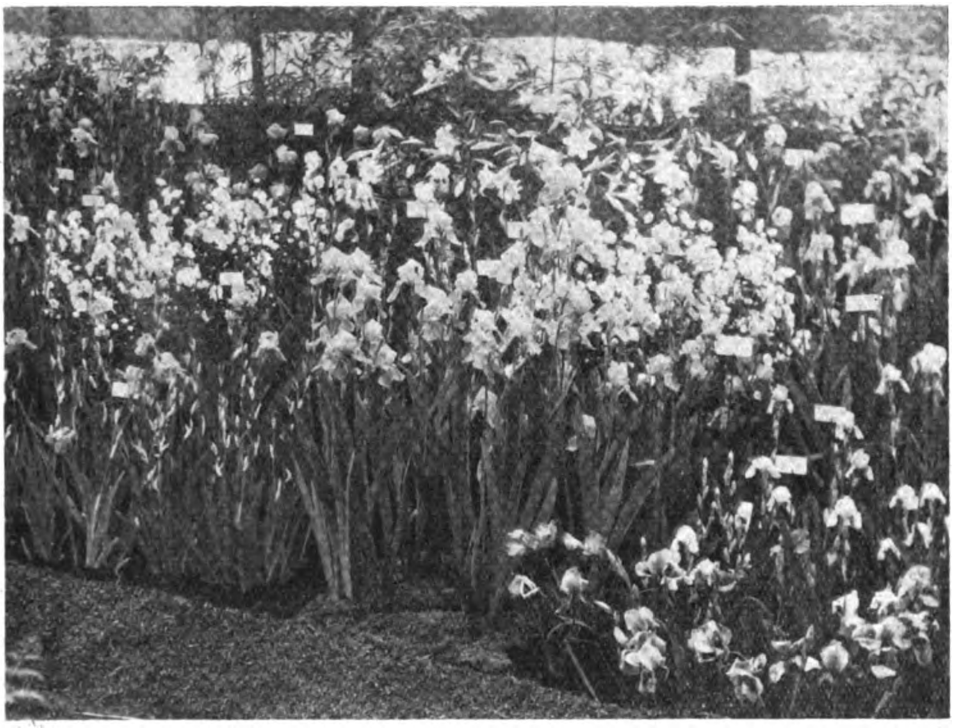

FIG. 160.—PART OF MESSRS. G BUNYARD AND COS'. EXHIBIT OF IRISES AT CHELSEA SHOW.

On the staging Messrs. Ellisons displayed a collection of stove and greenhouse Ferns, chiefly as small pot plants. They included Nephrolepis todeaoides, Davallia fijensis robusta, Microlepia platyphylla, Pteris tremula Smithiana, Gleichenia dicarpa longipinnata, Asplenium Nidus, Lastrea lepidum, and many varieties of Adiantum, including Faulkneri, elegantissimum parvifolium, and fragrantissimum.

Sweet Peas.

Although the exhibits of Sweet Peas were not so numerous as on some former occasions the exhibits present were of supreme quality. Messrs. Dobbie and Co. staged an enormous quantity of excellent blooms in many varieties. The very best of standard varieties were exceptionally well represented, and from these enthusiasts turned their attention to the novelties. Magnet is a large, bright salmon-pink; Mermaid, lavender, of great beauty. The colour of Ruby is well described by its name, and the flower possesses decided merits. Grenadier is a glorious scarlet of large size and glowing colouring. Royal Sovereign, perhaps the best of the orange-coloured varieties was represented by several large stems of vivid blooms. Majestic Cream is the best of its colouring, and Constance Hinton still retains its place amongst the white Sweet Peas. The two pink shaded varieties, Sylvia and Miss California, which received awards at the trials of the National Sweet Pea Society last year, fully justified their selection. Youth, a beautiful picotee-edged variety was also especially well shown.

Wembley, the silvery lavender Sweet Pea, which won the Silver Medal at the National Sweet Pea Society's trials, was the dominant variety in a fine exhibit, most attactively arranged by Messrs. R. Bolton and Sons. Their other sterling novelties were Peggy, glowing cerise; Black Bess, the darkest maroon; Rogue Pink, a glowing pink, of Picture type and Ivory Picture, the splendid variety which received an award last year. In addition to these they had a great many standard varieties including Picture, R. F. Felton, Birdbrook, Lady Evelyn, mauve; Angèle a fancy of great charm, Charming, deep cerise; Sunset, one of the brightest of the rose-pinks, and Tangerine Improved.

In an attractive group Messrs. Alex. Dickson and Sons included four very fascinating seedlings in Mermaid, a good pale lavender; Magnet, of vivid salmon-pink shades; Crusader, orange-pink, and Stella, a Picotee-edged variety much like Youth but rather deeper coloured on the margins. Of the older varieties Hawlmark Pink, Fairie Queen, King Mauve, Wizard, of brilliant orange colour, Ravenswing, of intensely dark maroon, and Powerscourt were particularly good.

Messrs. J. Carter and Co. associated many superb Sweet Peas with their exhibit of miscellaneous flowers. The principal novelties were Ruffles, rosy lavender of great size; Mrs. H. Byford, of bright pink shades; Purple Beauty, Queen Marie, orange standard and crimson lake wings; Mrs. A. Searles, bright carmine; Enid, pale crimson; Superb, of Picture-like type but deeper colouring; Geisha, flushed old ivory; Raynes Park, silvery lavender, and Beacon, a glowing orange coloured variety.

Rock Gardens.

The rock-gardens are always a prominent feature of these shows now-a-days and the several shown were all very good, although perhaps not so numerous as in some years.

By a fortuitous happening three rock gardens, arranged by Mr. George G. Whitelegg, Chislehurst, Messrs. Pulhams, Newman Street, London, and Mr. Clarence Elliott, Stevenage, respectively, appeared to be so designed and merged as to present one continuous whole. All three were good, and the combined effect may be well imagined, appearing as the most imposing rockery scheme attempted at an exhibition. Similar stone, deftly arranged by each exhibitor, and the inclusion of all that is choice and attractive for planting, deficiencies by one being supplied by another, left little to be desired and it is difficult to appraise which was the superior.

Mr. Whitelegg brought his stone furthest to the front, but it was made to drop in a realistic manner and the centre was traversed by a stream with waterfall. Pockets and terraces were bright with such fine alpines as Aethionema Warley Rose, Phlox Vivid, Dianthus alpinus, Saxifraga caterhamensis (white flowers spotted with red), S. longifolia (extra fine), Lithospermum Heavenly Blue, and Viola gracilis Enid (pale mauve), with Cytisus sprays overhanging the upper part that was backed with Pinus sylvestris. The garden was so designed that the visitor could traverse through each part by grass glades or stepping stones, thus making inspection easy.

Messrs. Pulham and Son brought a winding stream into their scheme, the water pouring out of stones at the highest part. The planting was very effective, especially along the stone-lined bank of the stream. An outcrop of stone in the centre was planted with Saxifraga Hostii and under the eaves of the stones was a colony of Sedum spathulifolium purpureum. Fine masses of Aubrietias, Saxifraga granulata, Trillium grandiflorum, Phloxes and Primulas, furnished plenty of bright colour.

Mr. Clarence Elliott made a great feature of miniature Conifers, tiny plants of perfect pyramidal form of Juniperus hibernica compressa, like a forest in miniature. These occupied an outcrop by themselves, set in moss, jewelled with a few alpine gems such as Daphne rupestris, Erinus alpinus albus and Iris cristata, near the edge. Of great merit were plants of Saxifraga Cotyledon caterhamensis, Gentiana acaulis, Primula pulverulenta, P. helodoxa, Viola Blue Stone and Aquilegia glandulosa.

Messrs. Gavin Jones, and Ingwersen, Letchworth, constructed a rockery with a bold outcrop of stone, forming a plateau on which were disposed rare gems of the Alps, rather too crowded to be natural, but necessary to display a good selection at an exhibition. Fine old-weathered Westmoreland stone, with beautiful stratification, supported the front of the plateau, and this material was used where steps led to the higher part, and on the one side, where the planting was very effective. On the opposite side, were batches of such Conifers as Pinus Cembra, Juniperus communis compressa, Picea excelsa dumosa, P. montana, Abies Remontii, and Juniperus hudsonica. Immediately in front, on the higher part at the back, was a fine display of Saxifaga Cotyledon caterhamensis, which originated with this firm.

Messrs. **HODGSONS**, Nottingham, had a bluff or outcrop of a mountain side, looking very realistic, grass leading to the higher part, with outcropping stones here and there in the turf. Down one side ran a mountain stream, tumbling in one spot over stones, and ending in a pool planted with a few aquatics. The lower part of the rockery was a morain, furnished with plants that find rock débris and the under-surface water congenial to them. The chief feature was the beautiful, mountain-side rockery of striated grey stones, and these were disposed in a series of terraces that were planted with Daphne Cneorum, Viola gracilis, Alpine Phloxes, Saxifrages, Aubrietias, and the like, with pygmy shrubs and evergreens at points of vantage.

Mr. **HERBERT BROOK**, Whetstone, had an irregular corner rockery, very good in effect but rather overdone with plants (Fig. 161). However, as presented, there was nothing to offend, but rather to please, for it was as though planted for years. A stream ran through the centre, and stone was cleverly disposed to overhang in parts and make curves in others. A notable feature were the arching sprays of Brooms at the upper part near where the water issued from the stones. Close by, the same exhibitor had an enclosed, formal garden constructed of the beautiful limestone from Westmoreland, in which he specialises.

Messrs. **WM. CUTBUSH AND SON** constructed their rock-garden of red sandstone, and it was not overdone with plants, so that it was very natural-looking. Indeed, there was much in its cool, placid effect to admire, for the Ferns, Brooms, small Maples, and dwarf Conifers springing from the face of rock-work near water, appeared as though set by nature rather than by man. Colonies of Daphne Cneorum, Primula Bulleyana, Tulipa persica, Lewisia Cotyledon, Lithospermum prostratum, and Allium karataviense, were all splendidly in flower.

Alpine and Rock Plants.

THE art of staging hardy Alpine plants on tables has been thoroughly mastered by the leading exhibitors at the Chelsea Show, and many of the miniature Alpine gardens occupying only a few square feet of space were highly interesting. Messrs. **CARTER PAGE**, London Wall, had a nice little exhibit in which Dwarf Phloxes, Lithospermums prostratum and Heavenly Blue, Geums, Primulas and Saxifragas in variety peeped out of their crevices amongst the stones.

Quite unique in its arrangement was the table rock garden shown by Messrs. **GAVIN JONES AND INGWERSON**, Letchworth, and rarely has one seen Sedum spathulifolium purpureum shown with better effect, charming also was a small group of Primula farinosa standing out of a bed of the miniature Myosotis Rehsteineri.

Messrs. **CLARENCE ELLIOTT LTD.**, Stevenage Herts., set up a miniture rock garden which had a very natural look, and the most conspicuous features in it were a clump of Raoulia australis, Violas in variety and tiny Primulas. There was no suspicion of overcrowding here, and weathered stone was used with excellent effect.

Primulas growing as it were out of a bed of moss chiefly comprised the exhibit staged by **LADY ABERCONWAY** and the Honble H. D. **McLAREN**, Tal-y-cafn, North Wales, and in a charming variety of these interesting plants, Primula Auricula Queen Alexandra, and Primula Forresti were very conspicuous. Another delightful little plant in the collection was Sarmienta repens.

Mr. G. H. **CROW**, Southgate, Chichester, filled a corner of one of the tables with a little collection of Alpines, but the use of cork bark in the arrangement now belongs to the past history of exhibiting rock plants.

Mr. R. V. **ROGERS**, Pickering showed a collection that he described as hardy Yorkshire plants, though why Yorkshire in particular it was not easy to see, as in the group there were familiar Arabis, Alyssum montanum, Saxifragas, Gentiana acaulis and Primula farinosa.

In a mixture of rock plants with a miniature pool in the foreground set up by Mr. F. G. **WOOD**, Ashstead, Surrey, blue Gentians and Primulas were the most conspicuous features.

The name of **BACKHOUSE**, of York, and Alpine plants are in a way synonymous and the table display made by this firm was worthy of their reputation. The light blue of Phlox divaricata lilacina contrasted with the deeper colour of Gentiana acaulis, and other interesting plants in the collection were Antirrhinum asarina, Trillium grandiflorum, Daphne Cneorum, the diminutive Rosa Rouletti, and Saxifraga cotyledon platyphyllum.

Sandstone was used with considerable effect in the small exhibit sent from **SHEPPARD'S SHAWHURST NURSERY**, Hollywood, Birmingham, and amongst the flowers represented were pretty little clumps of dwarf Irises, Phloxes, and Primulas in variety, and Aquilegias.

Messrs. **MAXWELL AND BEALE**, Broadstone, used weathered stone with good effect to form pockets for the Alpines in their collection, and conspicuous amongst the latter were Primulas sikkimensis and Bulleyana, Erinus carmineus, Lithospermum prostratum, with clumps of Gorse and Broom forming a background and a pool of water which gave a touch of nature in the front.

The collection of Dwarf Alpines set up by Messrs. M. **PRICHARD** and **SONS**, Christchurch, Hants, was very attractive, the material used being in particularly good condition, but if anything the arrangement was a little too artificial. In spite of this however a bewildering variety of plants which included Ramondia pyrenaica, Einus alpinus alba, Saxifraga "White Giant," Phlox canadense Laphami, Tiarella cordifolia, abiiflora and Silne pusilla were much admired.

Showy clumps of Meconopsis Cambrica and Primula pulverulenta, Bartley Strain, were conspicuous features in the collection staged by Messrs. W. H. **ROGERS** and **SON, LTD.**, Southampton, and interest was also added by such charming subjects as Primula Lissadell hybrid, the little Cupressus tetragona in pots, Violas in variety and Campanula muralis major.

Rather quaint is the description which seems to fit the exhibit set up by Mr. H. **HEMSLEY**, Crawley, Sussex, for here one found dwarf Aloes, Crassula pyramidalis, curious Mesembryanthemums, Haworthias and similar plants associated for the time being with Dwarf Phloxes, Gentiana verna, Sedums, Dianthus alpinus with Rosa Rouletti and pots of the old Nertera depressa as a companion.

Messrs. R. **TUCKER** and **SONS**, Oxford, filled the space allotted to them very effectively with an assortment of Alpine plants very naturally arranged. In the collection there were pretty little groups of Stachys Corsica, Campanulas muralis major, and Garganica villosa, Androsace Chumbyi. Oethionema Warley hybrid, Primula farinosa with showy clumps of Delphinium Blue Bird at the back.

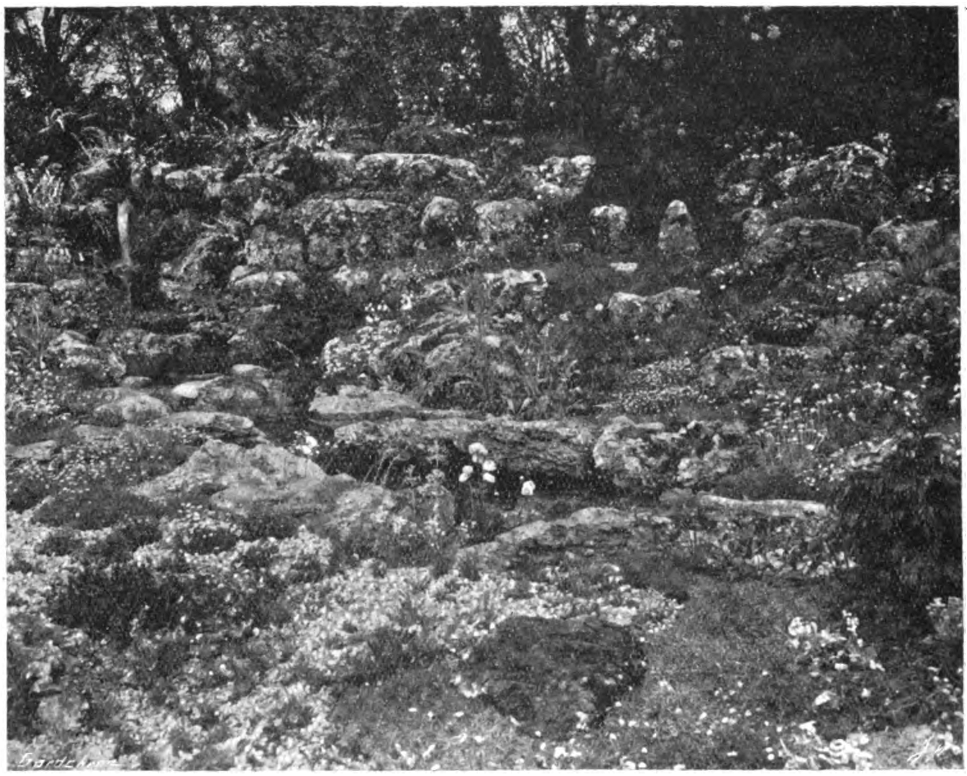

FIG. 161.—MR. HERBERT BROOK'S ROCK GARDEN AT CHELSEA SHOW.

Messrs. **SKELTON AND KIRBY**, Pirbright, Surrey, tastefully filled a small space with various familiar members of the alpine family. There was a decided artistic touch to the exhibit from Messrs. **BAKER'S**, of Wolverhampton, and both weathered-stone and green moss were tastefully employed in the arrangement. In the centre at the back one observed a group of Lupinus Downer's Delight, and showing up amongst many other interesting plants were Primulas helodoxa and pulverulenta, Incarvillea grandiflora, Phloxes and Saxifragas in variety. In company with a showy collection of Azaleas, Mr. G. **WHITELEGG**, of Chislehurst, had a small display of rock plants in which Saxifragas and Lithospermum Heavenly Blue were the most notable subjects.

The collection staged by Messrs. **WATERERS**, of Bagshot, seemed a little too flat, but the method of arrangement adopted showed up to advantage clumps of Rhododendron fastigiatum, Trollius pumilus, Meconopsis Cambrica plena and Cypripediums spectabile and calceolus, The alpine plants staged by Mr. G. Reuthe, Keston, Kent, were varied and interesting, but the method of showing them in green boxes was not attractive, and the fact of most of the plants being in pots did not add to the natural effect. The last remark also applies to the Alpines shown by Mr. E.. Scaplehorn, Beckenham, which would have been more attractive if they had been displayed in a more natural way.

In a mixed collection of hardy plants of an alpine character and otherwise Messrs. Bowell and Skarret Cheltenham, presented a little group of dwarf hardy Orchids. Saxifraga Wallacei, Oxalis adenophylla, and that curious spiny flowering plant Astragalus massiliensis.

The Central Garden Supplies, Harrow. Middlesex, filled a small space with dwarf hardy plants of the usual hardy character and they added a spice of novelty by displaying some of the above, in what appeared to be boxes roughcasted over with cement. Small, but quite attractive was the little rock garden set by Misses K. and E. Hopkins, Shepperton-on-Thames.

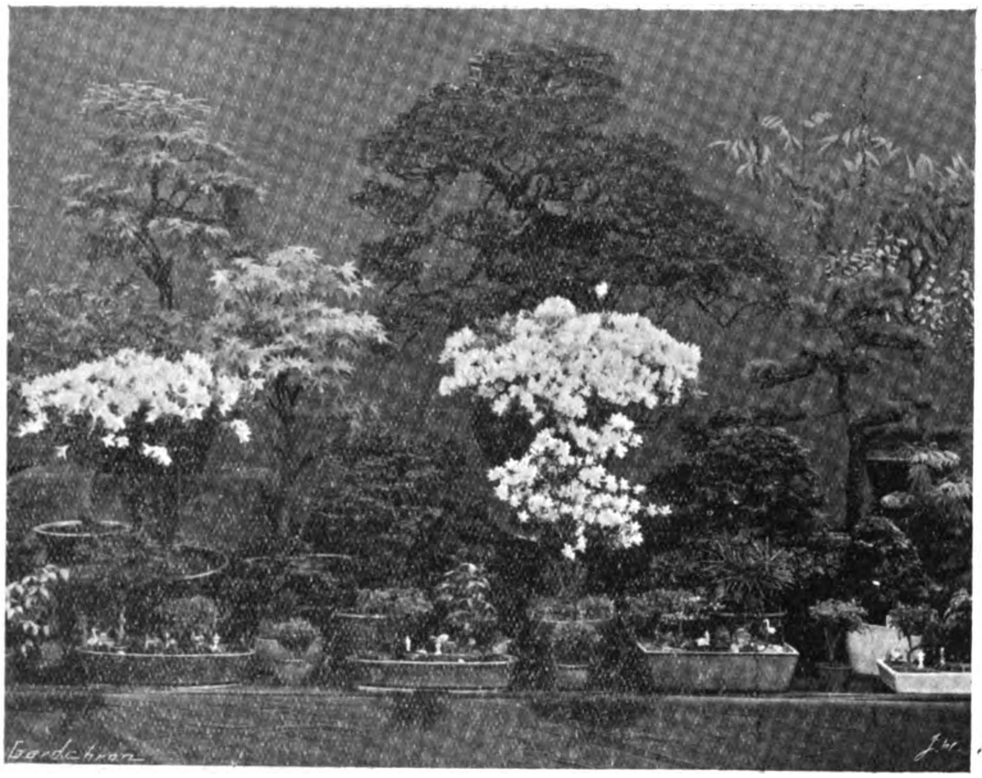

FIG. 162.—DWARF JAPANESE TREES AND MINIATURE GARDENS EXHIBITED BY THE YOKOHAMA NURSERY CO. AT CHELSEA SHOW.

Messrs. Price and Co., West Moors, Dorset, had some interesting rock and alpine plants, but they were placed on the table in pots without much effort at arrangement. In these days one does not expect to see this kind of thing at a Chelsea Show.

There was something daintily attractive about the collection of Alpines staged by Messrs. Cheal, of Crawley, and in it were observed the pretty Myosotis alpestris, Iberis gibraltarica and Aquilegia alpina.

Both unique and interesting was the exhibit staged by Messrs. Oliver and Hunter, Moniave, Dumfriesshire and here one saw the giant form of Primula Littoniana which looked very attractive. Conspicuous also in the collection were Primulas Ullsiana, helodoxa, and other interesting plants.

Mr. W. Wells, Junior, of Merstham, Surrey, staged a nice little collection of plants, amongst which Linum arboreum, Phlox Vivid, Primula Miller's Crimson and Saxifraga granulata plena, were conspicuous.

Narcissus and Tulip Committee.

Present: Sir Daniel Hall (in the chair). Mrs. Brodie, and Messrs. C. W. Needham, Herbert Smith, W. Poupart, Charles H. Curtis, Geo. Churcher, Arthur R. Goodwin, John W. Jones, C. C. Titchmarsh, and H. G. Hawker.

There was no special business before this Committee, and the only Tulip submitted for award—Ida Scott, of purplish magenta colour, failed to win the approval of the Committee.

Tulips.

Messrs. Barr and Sons, Covent Garden, London, made a great display with Tulips. There were three high banks of these attractive flowers, comprising all the leading varieties, amongst which were noticed Orange Perfection, The Zebra, General Kohler, Le Notre, Mrs. Hoog, Velvet King, Ronald Gunn, Farncombe Sander, Giant and Zulu and on either side of the Tulips were German Irises in charming variety and prettily arranged.

Messrs. R. H. Bath, Wisbech, made a great show of Tulips and there was considerable taste displayed in the arrangement. Amongst the many varieties displayed Alice, Andromache, White Queen, Mrs. Potter-Palmer, Dream, and Louis XIV. were greatly admired.

It is difficult to find words that would aptly describe the glorious display of Tulips set up by Messrs. Dobbie of Edinburgh, and the flowers on their long stalks were set up in a most tasteful manner. Everything that is excellent in the Tulip family was represented and perhaps the most strkiing flower in the group was the pure white hybrid Carrara, which is truly a glorious thing! Velvet King and The Giant were also very conspicuous.

The Maytham Gardens, Rolvenden, Kent, showed Tulips in vases in very good form, the most conspicuous varieties being La Tulipe Noire, almost black; Ellen Willmott canary-yellow, and Triton; salmon-pink. The Tulips from Messrs. E. Paul and Co. Cheshunt, were also good but the arrangement of the flowers was too lofty to show them to the best advantage; at the base of the stand was a very nice display of cut Roses.

From the Welsh Bulb Fields, Holland Arms, Anglesey, there came an attractive exhibit of Tulips, amongst which Prince of Orange was perhaps the most conspicuous variety, but a large number of other popular Tulips were also represented.

Though the exhibit of Tulips from Messrs. J. R. Pearson and Sons, Lowdham, was not so large as some it bore the stamp of quality. Conspicuous in the centre were the dark flowers of Faust, Velvet King and Marconi, and on either side a blaze of mixed colour was created by varieties of many different shades.

Set out in groups in a round bed on the ground the Tulips shown by Mr. H. G. Longford, Abingdon, Berks, showed off to great advantage, and visitors were impressed with this original method of exhibiting these flowers. All the gems of the Tulip family were represented, and the flowers were particularly fresh and bright.

Fruit and Vegetable Committee.

Present: Messrs. A. H. Pearson (in the chair), S. B. Dicks, H. Prince, P. C. M. Veitch, J. G. Weston, F. Jordan, F. G. Treseder, H. S. Rivers, T. Pateman, A. C. Smith, W. H. Divers, J. Basham, W. Poupart. W. F. Giles, E. Neal, G. F. Tinley, and A. N. Rawes.

The only subject for consideration by this committee was a variety of Pear sent by Mr. A. C. Buller, Stellenbosch, South Africa, for naming. It was not recognised by any of the members present, although it was suggested that it might be Beurrè d'Anjou. The flavour is excellent, and the variety is said to be later in season than Winter Nelis.

The secretary was requested to ask Mr. Buller to send the variety for trial in the Wisley Gardens.

Vegetables.

The only collection of vegetables was staged by Mr. Ed. Beckett, gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree. It will be remembered that last year Mr. Gibbs' exhibit of vegetables was awarded the Coronation Cup, offered for the most meritorious exhibit at the Holland Hall Show, and on this occasion the effort was no whit inferior. Apart from quality, the display was notable for the attractive manner in which it was arranged, but then Mr. Beckett has long since led the way in showing how to make vegetables as attractive as flowers on the show bench. He utilised to the full the bright colours found in numbers of vegetable roots, stems, and leaves, and blended them as an artist blends his colours in a picture. We make no attempt to describe the numerous sorts; suffice it to say that the kinds and varieties represented the best the kitchen garden affords, both in season and out of season, and that their quality was in the highest stage of perfection.

Messrs. Sutton and Sons showed thirty-six sorts of Potatos, grown in cold frames from seed tubers planted on January 20. The behaviour of the several sorts was interesting, and the exhibit was educative in demonstrating that excellent tubers may be had at this early date without the use of fire-heat. Much the best result was obtained with May Queen, and others of the first early section that did well were Eclipse. Immune, Ashleaf. and Sharpe's Express. Of second earlies, Ben Lomond was the best, whilst excellent tubers were shown of such late sorts as King Edward, White City, and Majestic.

Fruit.

Messrs. T. Rivers and Son, Sawbridgeworth, had the only exhibit of pot fruit trees, and they well maintained their high reputation as exhibitors of orchard-house trees. They had Peaches, Nectarines, Plums, Figs, Oranges, and Lemons. Nectarine John Rivers is comparatively new; it is earlier than Cardinal, and succeeds well in a cold house, and the fruits are bigger than those of Cardinal. Trees of Peaches Duchess of Cornwall and Duke of York were carrying fine, ripe fruits, whilst those of Blue Rock and Early Rivers Plums were crowded with fruits just turning colour. Apple trees in bloom were utilised to separate the Orange trees from the others, and they gave a touch of bright colour to this most interesting exhibit.

Messrs. **Laxton Bros.**, Bedford, excelled all their previous efforts on this occasion in their usual exhibit of Stawberries. The display was much larger than on former occasions and the method of arrangment was exceedingly good, the fruits being arranged in baskets amidst Ferns and Palms for relief and with pot Strawberry plants all finely fruiting, set up in mounds, tier above tier. They took the opportunity to exhibit their three new varieties Rearguard, Robust and Empress, and in addition they had excellent samples of King George V, The Duke, Marshal Foch, Sir Douglas Haig and others.

Major the Hon. **Sir J. Ward**, K.C.V.O., Clinton, Hungerford (Gr. Mr. C. Beckett), showed the only exhibit of choice indoor fruits, which included Grapes, Melons, Peaches, Nectarines and Stawberries. The Grapes were of Foster's Seedling and Black Hamburg varieties. A very large number of Melons were included in this exhibit, of such sorts as Royal Favourite, Ringleader, Hero of Lockinge and Universal. Very good Peaches of Hale's Early variety and Nectarines Cardinal and Early Rivers, together with Brown Turkey Figs of good quality, found a place in this very tempting collection.

Messrs. G. **Bunyard and Co.**, showed some thirty varieties of Apples, a most remarkable display at a late May show. The fruits were very attractively arranged in mahogany-coloured baskets and the table was set off by a few Ferns and Palms. Of the several sorts the more notable were Norman Pippin, Wellington, Wagener, Allen's Everlasting, Barnack Beauty, Winter Quoining, Annie Elizabeth, Ontario, Stark, Braddick's Nonpareil, Claygate Pearmain, Sturmer Pippin, and Brownlee's Russet.

Mr. V. C. **Vickers**, Newsell's Park, Royston, showed two new Raspberries, New Amber and Viking, which are to be tried in the Wisley Gardens.

Miscellaneous.

One of the largest individual exhibits in the main tent was that of Messrs. **Sutton and Sons**, and this was composed almost solely of Antirrhinums and Nemesias. The general scheme was that of a large central circle (see Fig. 154) with radiating segments, having broad, gravelled paths from which the many varieties could conveniently be inspected. The wide bands of turf of perfect greenness and freedom from weeds formed a good setting for the flowers, which were all splendidly grown. The Antirrhinums were of the tall and intermediate types, and were arranged in blocks of distinct colours. The chief of the tall sorts were Old Rose, Buff-pink, and Bronze, while the intermediate varieties included Buff Beauty, Mauve Beauty, Deep Crimson, Rosy Queen, and Delicate Pink, and they bore spikes fully a foot long and well furnished with large flowers. Similarly, most of the large-flowered Nemesias had colour-descriptive names, such as Rich Orange, Scarlet, Cherry Red, and White. There were also bicolor forms, Aurora and Twilight, and the white and dark mauve of the latter was very effective, while Blue Gem gave the impression of a giant, erect Forget-me-Not of considerable charm.

At the Embankment end of the large tent Messrs. **Jas. Carter and Co.** had an excellent group of greenhouse plants. A large central mound contained a great many tall plants of a deep rose-coloured, double Clarkia of elegant beauty. Secondary groups were composed of Schizanthus, Stellata Cinerarias, and other plants linked up by a band of rich, pink, single Petunia Queen of the Roses which undulated across the middle of the large group. Near the front were placed round groups of Hippeastrums of high quality, Gloxinias Carter's Invincible Prize, Spotted and Goliath (Fig. 158), and these were of especially good quality, both as regards the strain and cultivation. Along the front of this large group was placed a line of fragrant Lily-of-the-Valley in pots. Flanking this large primary collection were two smaller ones, but still large, and these contained the excellent Sweet Peas which we have noted elsewhere, Schizanthus, Dutch Irises, Cinerarias of their Bouquet strain which produces dwarf, well-flowered plants of various colours, and Antirrhinums.

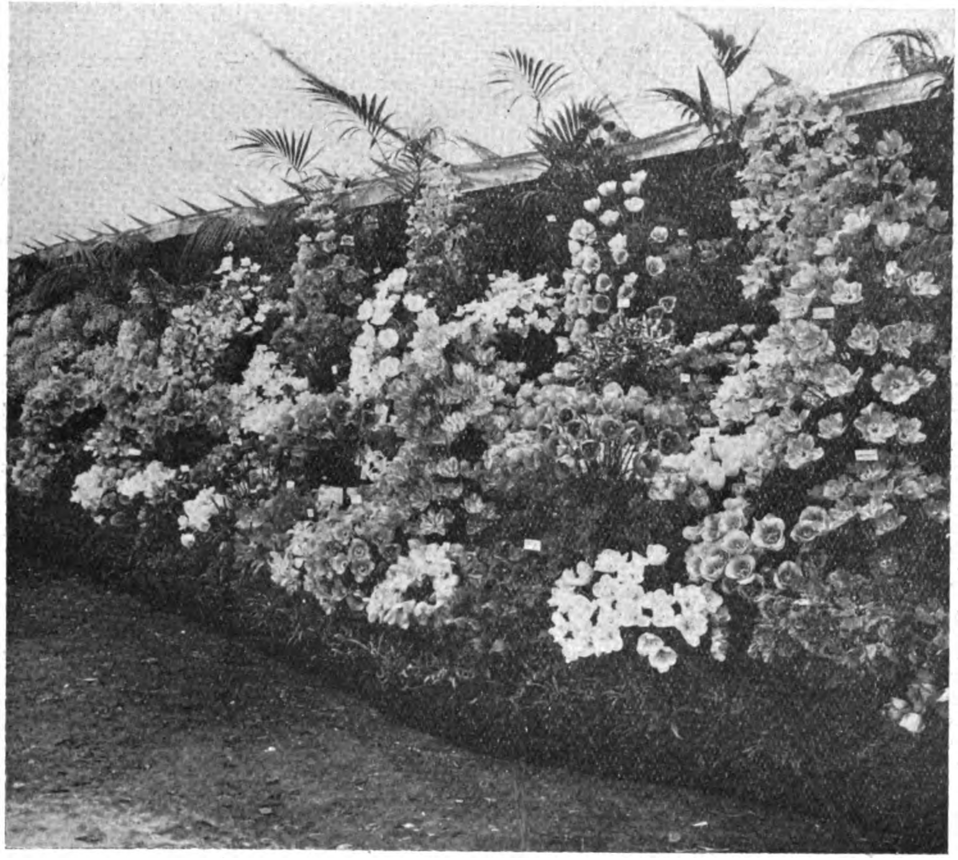

FIG. 163.—MESSRS. DOBBIE AND CO'S. EXHIBIT OF LATE-FLOWERING TULIPS AT CHELSEA SHOW.

Generous mounds of Schizanthus of excellent strain and Stellata Cinerarias, bearing countless flowers of perfect form and colouring, were set up against one of the sides of the tent by Messrs. **Edward Webb and Sons.** These were fronted with good groups of the large-flowered Cinerarias, herbaceous Calceolarias of considerable merit, Gloxinias, Nemesias and other plants which may be raised from seed; the whole making a large group of striking effect.

On a floor space in the Orchid tent Messrs. **Watkins and Simpson** had a delightful group of magnificent plants in ten-inch pots of Schizanthus Dr. Badger's Strain. These illustrated superb cultivation of a first-class strain which produces enormous quantities of large flowers in an almost bewildering variety of colours. In point of size of the plants there was a great difference between the foregoing and the Schizanthus staged by Mr. A. **Dawkins**, who showed his special dwarf strain which produces plants not more than a foot high in five-inch flower pots and smothered with blossoms of many lovely shades of colour.

Good plants of Schizanthus Wisetonensis were associated with a magnificent white Stock by Messrs. W. J. **Godfrey and Son**, and the **Blakeney Nursery Company** associated Schizanthus with Coltness Gem Dahlias in a small group.

AWARDS BY THE COUNCIL.

Challenge Cups.

Sherwood Cup for the most meritorious group (excluding Orchids), to Mr. C. **Engelmann**, for Carnations.

"Daily Graphic" Cup, for the best Rock Garden, to Mr. G. G. **Whitelegg**.

Cain Cup, for the best exhibit by an amateur, to the Honble. **Sir John Ward**, K.C.V.O. (gr. Mr. C. Beckett), for Melons, etc.

Orchid Challenge Cup, for the best exhibit of Orchids by an amateur, on a space not exceeding 60 square feet. Only those may compete who employ not more than three assistants in Orchid houses (including the head gardener), to H. T. **Pitt**, Esq., (gr. Mr. F. W. Thurgood), Stamford Hill.

Special Cup.

Allwood Carnation Bowl, for the best group of Carnations exhibited by an amateur, to Sir **William E. Cain**, Bart. (Exors. of the late), (gr. Mr. G. Moore).

Silver Cups.

To Messrs. J. **Allen and Co.**, for Roses; Mr. **James MacDonald**, for grass garden; Messrs. **Vernon Bros.**, for a formal garden; Mr. R. **Winder**, for a formal garden; Messrs. **Dobbie and Co., Ltd.**, for Tulips; Messrs. G. **Bunyard and Co., Ltd.**, for fruit; Messrs. **Laxton Bros.**, for Strawberries; Messrs.

Cowan and Co., for Orchids; Messrs. Stuart Low and Co., for Orchids; Mr. H. Brook, for a rock garden; Messrs. Pulham and Son, for a rock garden; H. T. Pitt, Esq. (gr. Mr. F. W. Thurgood), for Orchids; Messrs. Oliver and Hunter, for alpine plants; Messrs. R. and G. Cuthbert, for Azaleas; Messrs. Koster and Sons, for Rhododendrons and Azaleas; Mr. G. Reuthe, for Shrubs; Messrs. Hillier and Sons, for rare shrubs; Mr. Amos Perry, for Ferns and hardy plants; Messrs. E. Webb and Sons, for a miscellaneous group; H. B. Brandt, Esq. (gr. Mr. H. Cook), for Caladiums.

Medals.

Gold Medal and Congratulations.—To Mr. C. Engelmann, for Carnations; Messrs. Charlesworth and Co., for Orchids; Messrs. Dobbie and Co., Ltd., for Sweet Peas; Lady Aberconway and the Hon. H. D. MacLaren, for Primulas.

Gold Medals.—To Mr. E. J. Hicks, for Roses; Messrs. R. Wallace and Co., for a formal garden; Messrs. Jas. Carter and Co., for a formal garden; Messrs. Barr and Sons, for bulbous and herbaceous plants; Messrs. Allwood Bros., for Carnations and Dianthi; Major The Hon. Sir John Ward (gr. Mr. C. Beckett), for fruit; the Hon. Vicary Gibbs (gr. Mr. E. Beckett), for vegetables; Mr. G. G. Whitelegg, for a rock garden; Sir Jeremiah Colman, Bt. (gr. Mr. J. Collier), for Orchids; Messrs. R. W. Wallace and Co., for Rhododendrons, Lilies and Irises; Messrs. Blackmore and Langdon, for Begonias; Messrs. G. Bunyard and Co., Ltd., for Irises; Messrs. Jas. Carter and Co., for Cinerarias, Gloxinias and other greenhouse plants; Messrs. L. R. Russell, Ltd., for stove and greenhouse plants; Messrs. Sutton and Sons for Antirrhinums and other flowering plants; Mr. H. J. Jones, for Hydrangeas.

Silver-Gilt Lindley Medal.—To A. C. Burrage, Esq., for hardy Cypripediums.

Silver-Gilt Flora Medal.—To Messrs. W. Cutbush and Son, for Roses; Messrs. Bakers, for a formal garden; Messrs. R. and G. Cuthbert, for an Azalea garden; Mr. Ernest Dixon, for a formal garden; Mr. W. A. Watts, for Tulips; Mr. H. G. Longford, for Tulips; Mr. Clarence Elliott, for a rock garden; Messrs. J. Cypher and Sons, for Orchids; Messrs. Mansell and Hatcher, for Orchids; Mr. H. Hemsley, for alpine plants; Messrs. W. H. Rogers and Son, Ltd., for alpine plants; Messrs. G. Jones and Ingwersen, for alpine and other plants; Messrs. R. Tucker and Sons, for alpine and herbaceous plants; Mr. Clarence Elliott, for alpine and herbaceous plants; Dr. J. McWatt, for Primulas; Executors of the late Mr. Anthony Waterer, for shrubs; Messrs. Waterer, Sons and Crisp, for shrubs; The Donard Nursery Company, for flowering shrubs, etc.; Mr. R. C. Notcutt, for shrubs; The Yokohama Nursery Company, for Japanese dwarf trees and miniature gardens; Messrs. A. Charlton and Sons, for shrubs; Messrs. W. Fromow and Sons, for Japanese Maples; Messrs. L. R. Russell, Ltd., for Maples and climbing plants; Messrs. G. Jackman and Son, for Clematis; Mr. F. G. Wood, for herbaceous plants; Messrs. W. Cutbush and Son, for Hydrangeas; Messrs. Waterer, Sons and Crisp, for herbaceous plants and shrubs.

Silver-gilt Banksian Medal.—To Messrs. B. R. Cant and Sons, for Roses; Messrs. R. H. Bath, Ltd., for Tulips; Messrs. Stuart Low and Co., for Carnations; Mr. James Douglas, for Carnations; Messrs Bakers, for alpine plants; Messrs. Bowell and Skarratt, for alpine plants; Messrs. M. Prichard and Sons, for alpine plants; Messrs. Carter Page and Co., for alpine plants; Messrs. Maxwell and Beale, for alpine plants; Messrs. Prichard and Co., for alpine plants; Mr. E. Scaplehorn, for hardy plants; Mr. W. H. Walters, for Fritillarias, Cypripediums, etc.; Messrs. J. Cheal and Sons, for ornamental shrubs; Messrs. W. Cutbush and Son, for clipped trees and shrubs; Messrs. Stuart Low and Co., for shrubs; Messrs. R. Gill and Son, for flowering and other shrubs. Mr. H. N. Ellison, for Ferns, etc.; Messrs. B. Ladhams, Ltd., for hardy plants; Messrs. J. Peed and Son, for stove and greenhouse plants; Messrs. M. Prichard and Son, for herbaceous plants; Mr. E. Scaplehorn, for herbaceous plants; Messrs. Storrie and Storrie, for hardy plants; Messrs. Watkins and Simpson for Schizanthuses; Messrs. W. Artindale and Son, for Violas and Marigolds; Messrs. Bees, Ltd., for hardy and other plants; Messrs. Blackmore and Langdon, for Delphiniums; Messrs Carter Page and Co., for Dahlias; The Chalk Hill Nurseries, for miscellaneous plants; Mr. Alfred Dawkins, for Schizanthuses, etc.; Messrs. De Goede Bros., for Irises and Anemones; The Orpington Nurseries Co., for Irises; Messrs. Toogood and Sons, Ltd., for Irises and Tulips; Messrs. Flory and Black, for Orchids; Messrs. Alex Dickson and Sons, Ltd., for Sweet Peas; and Mr. S. Smith, for Cacti, etc.

Silver Hogg Medal.—To Messrs. T. Rivers and Son, for fruit trees in pots.

Silver Knightian Medal.—To Messrs. Sutton and Sons, for Potatos.

Silver Flora Medal.—Messrs. F. Cant and Co., for Roses; Messrs. W. Paul and Sons, for Roses; Messrs. W. Wood and Son, for a formal garden; Mr. H. Clarke, for Violas; Messrs. Hewett and Co, for Delphiniums; Messrs. Jarman and Co. for Pelargoniums; The Maytham Gardens, for cut flowers; Mr. G. A. Miller, for herbaceous plants and shrubs; Mr. Wm. Yandell, for Violas; Messrs. Smail and Co., for herbaceous and alpine plants; Mr. W. Wells, Junr., for herbaceous and alpine plants; Messrs. J. Cheal and Sons, for a formal garden; Messrs. W. H. Gaze and Son, for a formal garden; Johnstone-Garden Contractors, Ltd., for a formal garden; Messrs. Maxwell and Beale, for a formal garden; Messrs. J. R. Pearson and Sons, for Tulips; The Maytham Gardens, for Tulips; Executors of the late Sir W. Cain, for Carnations; Messrs. W. Cutbush and Son, for a rock garden; Mr. H. Dixon, for Orchids; Messrs. Sanders, for Orchids; Miss S. Thompson, for Cacti; The Backhouse Nurseries, Ltd., for alpine plants; Messrs. J. Cheal and Sons, for alpine plants; The Aldersey Horticultural College, for Primulas; Central Garden Supplies, Ltd., for alpines; Messrs. Sheppards, for alpine plants; Messrs. Skelton and Kirby, for a rock garden; Mr. R. V. Rogers, for alpine plants; Messrs. N. J. Endtz and Co., for shrubs; Mr. T. Lewis, for shrubs; Mr. W. C. Slocock, for shrubs; Mr. C. Turner, for shrubs; Messrs. W. Watson and Sons, for shrubs; Messrs. R. Green, Ltd., for Bay trees and Palms.

Silver Banksian Medal.—To the Rev. J. H. Pemberton, for Roses; Mr. G. Prince, for Roses; Horsecombe Quarries and Stone Works, for a formal garden; Mr. J. Klinkert, for topiary and formal garden; Messrs. E. Paul and Co., for Tulips; Messrs. K. Luxford and Co., for Carnations; Messrs. Hodsons, for a rock Garden; Messrs. G. Jones and Ingwerson, for a rock garden; Messrs. R. Bolton and Son, for Sweet Peas; G. H. Crow, Esq. (gr. Mr. A. Tingley), for alpine plants; Mr. G. Reuthe, for alpine plants; Miss K. Hopkinson, for alpine plants; Messrs. Harrods, Ltd., for shrubs; Mr. T. Carlile, for herbaceous plants; Messrs. G. Gibson and Co., for herbaceous plants; Messrs. W. J. Godfrey and Son, for Pelargoniums, and also one for Schizanthus; The Maytham Gardens, for herbaceous and alpine plants; Messrs. Reamsbottom and Co., for Anemones; Messrs. Rich and Co., for hardy plants.

Bronze Hogg Medal To V. C. Vickers, Esq. (gr. Mr. W. Watkins), for Raspberries.

Bronze Flora Medal.—To Mr. E. Dixon, for alpine plants and a rock garden; Mr. G. G. Whitelegg, for shrubs; Mr. R. J. Case, for Pelargoniums, and Messrs. J. Cheal and Sons, for Dahlias.

⁂ *Our remarks on the formal gardens, hardy plants and flowers, trees and shrubs, educational exhibits and horticultural sundries will be published in the next issue.*

ROYAL GARDENERS' ORPHAN FUND.

The annual festival dinner of the Royal Gardeners' Orphan Fund, held on Wednesday, May 13, resulted in a sum of over one thousand guineas being raised for the benefits of the orphans. Sir Alfred Mond, Bt., whose portrait is published on page 346, presided, and the company included many noted horticulturists. An account of the proceedings will be published in our next issue.

⁂ We regret that owing to great pressure upon our space we are compelled to hold over our report of the Truro Flower Show.

Obituary.

William Markham.—It is with much regret that we have to announce the death of Mr. William Markham (better known to many under the name of Kelk), who was in the employment of Messrs. Protheroe and Morris for fifty-three years, and was actively engaged up to a year ago. He was seventy-one years of age. It was just after the Ashtead sale in May 1924 that he had a breakdown, and though he resumed his duties for a little while he never completely recovered, and for the past six months had been confined to his bed. Mr. Markham was very well-known among Orchid growers and fanciers, and, to a lesser extent, amongst nurserymen in the home counties. He had a remarkable memory, and it could almost be said of him that he never forgot a plant when once he had seen it. His interest in Orchids commenced at a time when the collection of these plants was almost in its infancy, and he witnessed most of the sensational happenings of the boom period, about which he could always relate many interesting anecdotes. In addition, he had a widely extensive knowledge of horticulture generally, and few people could name correctly so many different plants.

ANSWERS TO CORRESPONDENTS.

Names of Plants: *J. B.* Lathraea squamaria. *A. B.* 1, Fritillaria imperialis; 2, Alyssum saxatile; 3, Berberis Darwinii; 4, not recognised; 5, Acer palmatum (Japanese Maple); 6, Veronica species; 7, Polygonatum multiflorum; 8, Griselinia littoralis; 9, Deutzia gracilis; 10, Lupinus polyphyllus; 11, Epimedium pinnatum; 12, Cerastium Biebersteini; 13, Delphinium species; 14, send when in flower. *J. E.* 1, Phillyrea decora; 2, Coleus thyrsoides; 3, a fasciated Polyanthus; 4, a form of Acer palmatum, the Japanese Maple.

Pansies: *V. E. G.* Although Pansies and Violas may show considerable variation, or even reversion, when cultivated under different conditions, we think some mistake has been made with regard to your No. 2 variety. We can hardly imagine that No. 1 has reverted to No. 2.

Communications Received.—K. A. W.—W. H. B.—J. E. M.—A. M.—W. H. B.—R. A. R.—C. T.—J. C.

THE GARDENERS' CHR

The Dates of Meetings supplied by the Secretaries of the respective Societies are as complete as circumstance

☛ **During the operation of the Summer Time Act the times**

JANUARY.

1	Th	Moon, first quarter, 11.26 p.m. Nottingham and Notts. Chrys. Soc. meet.
2	F	"Gardeners' Chronicle" first issued, 1841.
3	S	Blackburn and Dis. Hort. Soc. meet. and lecture.
4	**S**	*2nd Sunday after Christmas.* Sun rises 8 hrs. 8 min.
5	M	
6	Tu	Roy. Caled'n Hort. Soc. meet.; Ancient Soc. of York Florists meet.
7	W	Roy. Agricultural Soc. of England Council
8	Th	Sun sets, 4 hrs. 8 min. [meet.
9	F	Roy. Hort. Soc. of Ireland Council meet.
10	S	Full Moon, 2.47 a.m.
11	**S**	*1st Sunday after Epiphany.*
12	M	Buxton Chrys. Soc. Ann. meet.; United Hort Ben. and Prov. Soc. meet.
13	Tu	Sun rises, 8 hrs. 3 min.; Roy. Hort. Soc.
14	W	Wimbledon Gdnrs. Soc. meet. [Coms. meet.
15	Th	Sun sets, 4 hrs. 18 min.
16	F	Orchid Club meet.
17	S	Moon, last quarter, 11.33 p.m.; Newcastle Hort. Soc. Annual dinner.
18	**S**	*2nd Sunday after Epiphany.*
19	M	Sun rises, 7 hrs. 58 min.
20	Tu	Winchester Hort. Soc. meet.; Croydon
21	W	Sun sets, 4 hrs. 28 min. [Grdns. Soc. meet.
22	Th	Roy. Botanic Soc. meet.
23	F	Assn. of Economic Biologists meet.; Manchester and N. of England Orchid Soc. meet.
24	S	New Moon, 2.45 p.m.
25	**S**	*3rd Sunday after Epiphany.*
26	M	Hove Hort. Soc. meet.
27	Tu	Sun rises, 7 hrs. 48 min.; Roy. Hort. Soc. Com. meet; Newcastle Hort. Soc. lecture.
28	W	Wimbledon Gdnrs. Soc. meet; Mitcham, Tooting and Dist Hort. Soc. meet.
29	Th	Gdnrs. Roy. Ben. Inst. meet. and election at Simpsons, Strand, at 2.30 p.m.; Brit. Florists' Federation Ann. meet. and dinner.
30	F	Sun sets, 4 hrs. 43 min.
31	S	Moon, first quarter, 4.43 p.m.

FEBRUARY.

1	**S**	*4th Sunday after Epiphany.* Wakefield and N. of E. Tulip Soc. Ann. meet.
2	M	Nat. Chrys. Soc. Ann. meet.
3	Tu	Roy. Caled'n Hort. Soc. meet.; Croydon Gdnrs. Soc. meet.; North of England Hort. Soc. Ann. meet.
4	W	Roy. Agricultural Soc. Council meet.
5	Th	Nottingham and Notts. Chrys. Soc. meet.
6	F	Manchester and N. of England Orchid Soc. meet.; Dundee Hort. Soc. lecture.
7	S	Blackburn and Dist. Hort. Soc. meet. and
8	**S**	Full Moon, 9.49 p.m. [lecture.
9	M	Burnley Hort. Soc. lecture; United Hort. Ben. and Prov. Soc. meet.
10	Tu	Roy. Hort. Soc. Ann. meet.; Jersey Gdnrs. Soc. meet.; Newcastle Hort. Soc. lecture.
11	W	Wimbledon Gdnrs. Soc. meet.; Sheffield Chyrs. Soc. meet
12	Th	Roy. Gdnrs. Orphan Fund Ann. meet and election at Simpsons, Strand (prov.).
13	F	R.H.S. of Ireland Council meet.; Orchid Club meet.
14	S	*St. Valentine.* Sun rises, 7 hrs. 19 min.
15	**S**	*Sexagesima Sunday*
16	M	Moon, last quarter, 9.41 a.m.
17	Tu	Winchester Hort. Soc. meet; Croydon Gdnrs. Soc. meet.
18	W	Sun sets, 5 hrs. 18 min.
19	Th	Sun rises, 7 hrs. 9 min.
20	F	Manchester and N. of England Orchid
21	S	Sun sets, 5 hrs. 23 min. [Soc. meet.
22	**S**	*Quinquagesima Sunday.*
23	M	New Moon, 2.12 a.m.
24	Tu	Roy. Hort. Soc. Coms. meet.; Newcastle Hort. Soc. lecture.
25	W	Wimbledon Gdnrs. Soc. meet; Mitcham Tooting and Dist. Hort. Soc. meet.; Sheffield Chrys. Soc. meet.
26	Th	Sir Christopher Wren d. 1723; Assn. of Economic Biologists provincial meeting at Edinburgh (2 days); Roy. Botanic Soc. meet.
27	F	Sun rises, 6 hrs. 52 min.
28	S	Sun sets, 5 hrs. 34 min.

MARCH.

1	**S**	*1st Sunday in Lent. St. David.* Wakefield and N. of E. Tulip Soc. meet.
2	M	
3	Tu	Roy. Caled'n Hort. Soc. meet.; Croydon Gdnrs. Soc. meet.; Ancient Soc. of York Florists meet.
4	W	R. Agricultural Soc. of Eng. Council meet.
5	Th	Nottingham and Notts. Chrys. Soc. meet.
6	F	Manchester and North of Eng. Orchid Soc. meet.; Dundee Hort. Soc. lecture.
7	S	Blackburn Hort. Soc. meet. and lecture.
8	**S**	*2nd Sunday in Lent.* Sun rises, 6 hrs. 33 min.
9	M	Burnley Hort. Soc. lecture; United Hort. Ben. and Prov. Soc. Ann. meet.
10	Tu	Full Moon, 2.21 p.m.; Roy. Hort. Soc Coms. meet. (2 days); Jersey Gdnrs. Soc. meet; Newcastle Hort. Soc. lecture.
11	W	Wimbledon Gdnrs. Soc. meet; Sheffield
12	Th	Sun sets, 5 hrs. 57 min. [Chrys. Soc. meet.
13	F	R.H.S. of Ireland Council Meeting;
14	S	Sun rises, 6 hrs. 19 min. [Orchid Club meet.
15	**S**	*3rd Sunday in Lent.*
16	M	Sun sets, 6 hrs. 4 min.
17	Tu	*St. Patrick.* Moon, last quarter, 5.22 p.m.; Winchester Hort. Soc. meet; Croydon Gdnrs.
18	W	Sun rises, 6 hrs. 10 min. [Soc. meet.
19	Th	
20	F	Manchester and N. of England Orchid
21	S	Spring Equinox. [Soc. meet.
22	**S**	*4th Sunday in Lent.*
23	M	Sun sets, 6 hrs. 16 min.
24	Tu	New Moon, 2.3 p.m.; R.H.S. Coms. meet. (2 days); Newcastle Hort. Soc. lecture.
25	W	*Lady Day.* Wimbledon Gdnrs. Soc. meet; Mitcham, Tooting and Dist. Hort. Soc. meet.; Sheffield Chrys. Soc. meet. [Soc. meet.
26	Th	British Carnation Soc. Ex.; Roy. Botanic
27	F	Assn. of Economic Biologists meet.
28	S	Sun rises, 5 hrs. 48 min.
29	**S**	*5th Sunday in Lent.*
30	M	Sun sets., 6 hrs. 27 min.
31	Tu	Sir I. Bayley-Balfour b. 1853

JULY.

1	W	Roy. Agricultural Soc. Council meet.
2	Th	Nottingham and Notts. Chrys. Soc. meet.
3	F	Nat. Rose Soc. Ex. at Regents Park (2 days).
4	S	Blackburn and Dis. Hort. Soc. meet.
5	**S**	*4th Sunday after Trinity.* Wakefield and N. of E. Tulip Soc. meet.
6	M	Full Moon, 4.54 a.m.; Sir H. Veitch d., 1924
7	Tu	Roy. Agricultural Soc. Ex. at Chester (5 days); Roy. Caledonian Hort. Soc. meet
8	W	Nat. Rose Soc. provincial Ex. at Bath (2 days); Brighton, Hove and Sussex Hort. Soc. Ex. (2 days); Sheffield Chrys. Soc. meet.; Ancient Soc. of York Florists Ex.
9	Th	Fire insurance due.
10	F	Roy. Hort. of Ireland Council meet.
11	S	Newcastle Hort. Soc. ann. outing.
12	**S**	Moon, last quarter, 9.34 p.m.
13	M	United Hort. Ben. and Prov. Soc. meet.
14	Tu	Roy. Hort. Soc. Coms. meet.; Nat. Carnation Soc. Ex.; Roy. Tunbridge Wells Hort. Soc. Ex. (2 days); Wolverhampton Floral Fete (3 days).
15	W	*St. Swithin*; Guildford Gdnrs. Assoc. Ex.
16	Th	National Sweet Pea Soc. Ex. (2 days)
17	F	Sun rises 4 hrs. 4 min.
18	S	Elstree and Dis. Hort. Soc Ex.; Finchley Hort. Soc. Ex.
19	**S**	*6th Sunday after Trinity.*
20	M	New Moon, 9.40 p.m.
21	Tu	Winchester Hort. Soc. meet.
22	W	Mitcham, Tooting and Dis. Hort. Soc. Ex.
23	Th	Roy. Botanic Soc. meet.
24	F	Sun sets 7 hrs. 59 min.
25	S	Sun rises 4 hrs. 14 min.
26	**S**	*7th Sunday after Trinity*
27	M	Sun sets 7 hrs. 55 min.
28	Tu	Moon, first quarter, 8.23 p.m.; Roy. Hort. Soc. Coms. meet; Newcastle Hort. Soc. lecture.
29	W	Hayward's Heath Hort. Soc. Ex. (2 days); Sevenoaks Hort. Soc. Ex.
30	Th	Roy. Lancaster Agri. Soc. Ex. (3 days).
31	F	Gun and Game Licences expire.

AUGUST.

1	S	Blackburn and Dist. Hort. Soc. meet.
2	**S**	*8th Sunday after Trinity.* Wakefield and N. of E. Tulip Soc. meet.
3	M	Walsall Hort. Soc. Ex. (2 days); Bishops Stortf'd Hort. Soc. Ex.; Rutland Hort. Soc. Ex.
4	Tu	Full Moon, 11.59 a.m. Leicester Abbey Flower Show (2 dys); Roy. Caled'n H. S. meet.
5	W	Northampton Hort. Soc. Ex. (2 days) Roy. Agricultural Soc. Council meet.
6	Th	Nottingham and Notts. Chrys. Soc. meet; Market Bosworth Hort. Soc. Ex.
7	F	Sun rises 4 hrs. 34 mins.
8	S	Sun sets 7 hrs. 35 mins.
9	**S**	*9th Sunday after Trinity.*
10	M	United Hort. Ben. and Prov. Soc. meet.
11	Tu	Moon, Last Quarter, 9.11 a.m.; Roy. Hort. Soc. Coms. meet; Clay Cross Hort. Soc. Ex.; Jersey Gdnrs. Soc. meet.
12	W	Taunton Dean Hort. Soc. Ex. (2 days); Banffshire H. S. Ex.; Sheffield Chrys. S. meet.
13	Th	Aberdeen Roy. Hort. Soc. Ex. (3 days).
14	F	Roy. Hort. Soc. of Ireland Council meet.
15	S	Sun rises 4 hrs. 46 mins.
16	**S**	Reginald Farrer d., 1920
17	M	Sun sets 17 hrs. 18 min.
18	Tu	Winchester Hort. Soc. meet.
19	W	New Moon, 1.15 p.m.; Derbyshire Hort. Soc. Ex.; R.H.S. of Perthshire Ex. (2 days).
20	Th	Sun rises 4 hrs. 54 mins.
21	F	Montrose Hort. Soc. Ex. (2 days); London and N.W. Hort. Soc. Ex. at Manchester.
22	S	Burnley Hort. Soc. Ex.
23	**S**	*11th Sunday after Trinity.*
24	M	Sun sets 7 hrs. 3 mins. [Hort. Soc. lecture.
25	Tu	Roy. Hort. Soc. Coms. meet.; Newcastle
26	W	Southport Floral Fête (3 days); Mitcham, Tooting and Dis. Hort. Soc. meet.
27	Th	Moon, first quarter, 4.46 a.m.; Sandy Flower Show; Dundee Hort. Soc. Ex. (3 days); Roy. Botanic Soc. meet.
28	F	Dunfermline Hort. Soc. Autumn Ex. (2
29	S	Falkirk Hort. Soc. Ex. [days.
30	**S**	*12th Sunday after Trinity.*
31	M	Sun rises 5 hrs. 12 mins.

SEPTEMBER.

1	Tu	Roy. English Arboricultural Soc. meet. (4 days); Roy. Caledonian Hort. Soc. meet.; Croydon Gdnrs. Soc. meet.
2	W	Full Moon, 7.53 p.m.; Roy. Agricultural Soc. Council meet.
3	Th	Nottingham and Notts. Chrys. Soc. meet.
4	F	London Dist. Allotments and Garden Show at R.H.S. Hall (2 days). [lecture.
5	S	Blackburn and Dis. Hort. Soc. meet. and
6	**S**	*14th Sunday after Trinity.* Wakefield and N. of E. Tulip Soc. meet.
7	M	
8	Tu	Roy. Hort. Soc. Coms. meet. (2 days); Jersey Gdnrs. Soc. meet.
9	W	National Dahlia Soc. Ex.: Roy. Caledonian Hort. Soc. Ex. (3 days); Ancient Soc. of York Florists' Ex.
10	Th	Moon, last quarter, 0.12 a.m.
11	F	Roy. Hort. Soc. of Ireland Council meet.
12	S	Sun rises 5 hrs. 31 min.
13	**S**	*13th Sunday after Trinity.*
14	M	United Hort. Ben. & Prov. Soc. meet.
15	Tu	Winchester Hort. Soc. meet.; Croydon Gdnrs. Soc. meet.
16	W	Hove Hort. and Allotment Soc. meet. (2 days); North of Eng. Hort. Soc. Ex. (3 days).
17	Th	Nat. Rose Soc. Autumn Ex. (2 days); Roy. Botanic Soc. meet.
18	F	New Moon. 4.12 a.m.
19	S	Sun sets 6 hrs. 5 min.
20	**S**	*15th Sunday after Trinity.*
21	M	Sun rises 5 hrs. 45 min.
22	Tu	Roy. Hort. Soc. Coms. meet. at Holland Park (3 days); Newcastle Hort. Soc. lecture.
23	W	Autumn Equinox.
24	Th	Royal Botanic Soc. meet.
25	F	Moon, first quarter, 11.51 a.m.
26	S	Sun sets 5 hrs. 49 min.
27	**S**	*16th Sunday after Trinity.*
28	M	Sun rises 5 hrs. 56 min. [meet.
29	Tu	*Michaelmas Day*; Roy. Hort. Soc. Coms.
30	W	Mitcham, Tooting and Dist. Hort. Soc. meet (2 days).

NICLE ALMANAC, 1925.

ll allow, but some appointments are not made at the time of publication, and others are liable to alteration.
or Astronomical and other notes must be altered accordingly.

APRIL.

1	W	Moon, first quarter, 8.12 a.m.; Roy. Agricultural Soc. Council meet.
2	Th	Nottingham and Notts. Chrys. Soc. meet.
3	F	Manchester and N. of Eng. Orchid Soc. meet.; Dundee Hort. Soc. lecture.
4	S	Blackburn Hort. Soc. meet. and lecture.
5	**S**	*Palm Sunday.* Wakefield and N. of E. Tulip Soc. meet.
6	M	United Hort. Ben. and Prov. Soc. meet.
7	Tu	Roy. Hort. Soc. Coms. meet (2 dys.); Roy. Caledonian Hort. Soc. meet.; Roy. Hort. of Ireland Spring Show (2 days); Croydon Gdnrs. Soc. meet.
8	W	Wimbledon Gdnrs. Soc. meet; Sheffield Chrys. Soc. meet; Ancient Soc. of York Florists Ex.
9	Th	Full Moon, 3.33 a.m.
10	F	*Good Friday.* Sun rises, 5 hrs. 18 min.
11	S	Newcastle Hort. Soc. Ex.
12	**S**	*Easter Day.*
13	M	
14	Tu	Jersey Gdnrs. Soc. meet.
15	W	Moon, last quarter, 11.40 p.m.: R.H.S. Coms. meet. (Narcissus Show, 2 days).
16	Th	Huntingdonshire Daffodil Soc. Ex.
17	F	Manchester and N. of England Orchid Soc. meet.
18	S	Primrose Day.
19	**S**	*Low Sunday.*
20	M	Sun sets, 7 hrs. 2 min.
21	Tu	Roy. Hort. Soc. Coms. meet (2 days); Winchester Hort. Soc. meet.; Croydon Gdnrs. Soc. meet.
22	W	Midland Daffodil Soc. Ex. (2 days); Sheffield Chrys. Soc. meet.
23	Th	*St. George.* New Moon, 2.28 a.m.; Roy. Botanic Soc. meet.
24	F	Nat. Rose Soc. Ex.; Roy. Caledonian Hort. Soc. Spring Ex. (2 days); Assn. of Economic Biologists meet.
25	S	Sun rises, 4 hrs. 47 min.
26	**S**	*2nd Sunday after Easter.*
27	M	Sun set, 7 hrs. 14 min.
28	Tu	Newcastle Hort. Soc. lecture.
29	W	Mitcham, Tooting and Dist. Hort. Soc. meet.
30	Th	Sun rises 4 hrs. 37 min.

MAY.

1	F	Moon, first quarter, 3.20 a.m; Manchester and N. of England Orchid Soc. meet.
2	S	Blackburn and Dist. Hort. Soc. meet. and lecture.
3	**S**	Wakefield and N. of E. Tulip Soc. meet.
4	M	Sun rises, 4 hrs. 29 min.
5	Tu	Roy. Hort. Soc. Coms. meet. (2 days); Nat. Tulip Soc. Ex. (2 dys); Roy. Caledonian Hort. Soc. meet.
6	W	Roy. Agricultural Soc. Council meet.
7	Th	Nottingham and Notts. Chrys. Soc. meet
8	F	Full Moon, 1.43 p.m.; Roy. Hort. of Ireland Council meet.; Orchid Club meet.
9	S	Sun sets, 7 hrs. 33 min.
10	**S**	*4th Sunday after Easter.*
11	M	United Hort. Ben. and Prov. Soc. meet.
12	Tu	Jersey Gdnrs. Soc. meet.
13	W	Sheffield Chrys. Soc. meet.
14	Th	Sun rises, 4 hrs. 13 min.
15	F	Moon, last quarter, 5.46 a.m.; Manchester and N. of England Orchid Soc. meet.
16	S	Sun sets, 7 hrs. 44 min.
17	**S**	*Rogation Sunday.*
18	M	Sun rises, 4 hrs. 7 min.
19	Tu	Roy. Hort. Soc. Chelsea Show (5 days); Winchester Hort. Soc. meet.; Croydon Gdnrs Soc. meet.
20	W	Kew Guild Ann. meet. and dinner.
21	Th	*Ascension Day.*
22	F	New Moon, 3.48 p.m.; Assn. of Economic Biologists meet.
23	S	Wakefield and N. of E. Tulip Soc. Ex. (4 days).
24	**S**	*Sunday after Ascension Day.*
25	M	Sun rises, 3 hrs. 58 min.
26	Tu	Newcastle Hort. Soc. lecture.
27	W	Mitcham, Tooting and Dist. Hort. Soc. meet.
28	Th	Bath and West and Southern Counties Soc. Ex. at Maidstone (5 days).
29	F	Sun sets, 8 hrs. 40 min.
30	S	Moon, first quarter, 8.4 p.m.; Dr. M. T. Masters d. 1907.
31	**S**	*Whit Sunday.*

JUNE.

1	M	*Whit Monday*; Sun rises 3 hrs. 51 min.
2	Tu	Roy. Caledonian Hort. Soc. meet.; Ancient Soc. of Yorks Florists' meet.
3	W	Roy. Agricultural Soc. Council meet.
4	Th	Nottingham and Notts. Chrys. Soc. meet.
5	F	Sun sets 8 hrs. 9 min.
6	S	Full Moon, 9.48 p.m.; Blackburn and Dis. Hort. Soc. meet. and lecture.
7	**S**	*Trinity Sunday.* Wakefield and N. of E. Tulip Soc. meet.
8	M	United Hort. Ben. & Prov. Soc. meet.
9	Tu	Roy. Hort. Soc. Coms. meet. (2 days); Jersey Gdnrs. Soc. meet.
10	W	Sheffield Chrys. Soc. meet.
11	Th	Sun rises 3 hrs. 45 min.
12	F	Roy. Hort. Soc. of Ireland Council meet.
13	S	Moon, last quarter, 0.44 p.m.
14	**S**	*1st Sunday after Trinity.*
15	M	Season for fresh-water fishing ends.
16	Tu	Winchester Hort. Soc. meet.
17	W	Sun sets 8 hrs. 17 min.
18	Th	Sun rises 3 hrs. 44 min.
19	F	Manchester and N. of England Orchid Soc. meet.
20	S	Sun sets 8 hrs. 18 mins.
21	**S**	New Moon, 6.17 a.m.; Summer Solstice.
22	M	Sun rises 3 hrs. 45 min.
23	Tu	Roy. Hort. Soc. Coms. meet. (2 days); Newcastle Hort. Soc. Lecture.
24	W	Midsummer Day: Croydon Hort. Soc. Ex.; Mitcham, Tooting aud Dist. Hort. Soc. meet.
25	Th	Roy. Botanic Soc. meet.
26	F	Assn. of Economic Biologists meet.
27	S	Sun sets 8 hrs. 19 min.
28	**S**	*3rd Sunday after Trinity.*
29	M	Moon, first quarter, 9.43 a.m.
30	Tu	Roy. Hort. Soc. Coms. meet.; Amateurs' Show (2 days); Sir Joseph Paxton b., 1817.

OCTOBER.

1	Th	Nottingham and Notts. Chrys. Soc. meet; Pheasant Shooting begins.
2	F	Full moon, 5.23 a.m.; Dundee Hort. Soc. lecture.
3	S	Blackburn and Dis. Hort. Soc. meet. and lecture.
4	**S**	*17th Sunday after Trinity.* Wakefield and N. of E. Tulip Soc. meet.
5	M	
6	Tu	Roy. Hort. Soc. Coms. meet.; Roy. Caledonian Hort. Soc. meet.; Croydon Gdnrs. Soc. meet.
7	W	Roy. Agricultural Soc. Council meet.
8	Th	Sun rises 6 hrs. 13 min.
9	F	Moon, last quarter, 6.34 p.m.; Roy. Hort. Soc. of Ireland Council meet.
10	S	Sun sets 5 hrs. 17 mins.
11	**S**	*18th Sunday after Trinity.*
12	M	United Hort. Ben. & Prov. Soc. meet.
13	Tu	Jersey Gdnrs. Soc. meet.
14	W	Salisbury Gdnrs. Soc. meet.; Wimbledon Gdnrs. Soc. meet.; Sheffield Chrys. Soc. meet.
15	Th	Sun rises 6 hrs. 25 min.
16	F	Sun sets 5 hrs. 4 min.
17	S	New Moon, 6.6 p.m.
18	**S**	*19th Sunday after Trinity.*
19	M	Sun rises 6 hrs. 31 min.
20	Tu	Roy. Hort. Soc. Coms. meet. (2 days); Winchester Hort. Soc. meet.; Croydon Gdnrs. Soc. meet.
21	W	Sun sets 4 hrs. 54 min.
22	Th	Roy. Botanic Soc meet.
23	F	Assn. of Economic Biologists meet.
24	S	Moon, first quarter, 6.38 p.m.
25	**S**	*20th Sunday after Trinity.*
26	M	Sun rises 6 hrs. 44 min.
27	Tu	Newcastle Hort. Soc. ann. meet. and lecture.
28	W	Wimbledon Gdnrs. Soc. meet.; Mitcham. Tooting and Dist. Hort. Soc. meet.; Sheffield Chrys. Soc. meet.
29	Th	Sun sets 4 hrs. 38 min.
30	F	Sun rises 6 hrs. 51 min.
31	S	Full Moon, 5.17 p.m.

NOVEMBER.

1	**S**	*All Saints.* Wakefield and N. of E. Tulip Soc. meet.
2	M	*All Souls' Day.*
3	Tu	R.H.S. Coms. meet.; W. of Eng. Chrys. Soc. Ex. (3 days); Roy. Caledonian H.S. meet.
4	W	Kingston, Surbiton, The Dittons and Dis. Chrys. Soc. Ex.; Winchester Hort. Soc. Ex. (2 days); Wimbledon Gdnrs. Soc. meet.
5	Th	Nat. Chrys. Soc. Ex. (2 days); Taunton and Dist. Chrys. Soc. Ex.; Bedford and Dist. Chrys. Soc. Ex.
6	F	Dundee Hort. Soc. lecture; Corn Exchange Chrys. and Fruit Soc. Ex.
7	S	Blackburn and Dis. Hort. Soc. meet. and lecture.
8	**S**	Moon, last quarter, 3.13 p.m.
9	M	Gloucestershire Root, Fruit and Grain Soc. Ex.; United Hort. Ben. and Prov. Soc. meet.
10	Tu	Bright'n, Hove and Sussex H.S. Ex. (3 dys)
11	W	Armistice signed 1918; Wimbledon Gdnrs. Soc. Ex.; Nottingham and Notts. Chrys. Soc. Ex. (3 days); Bristol Hort. Soc. Ex. (2 days); Mitcham, Tooting and Dis. Hort. Soc. Ex.; Ancient Soc. of York Florists Ex. (2 days).
12	Th	Sheffield Chrys. Soc. Ex. (2 days).
13	F	Dunfermline Hort. Soc. Ex. (2 dys); Roy. Hort. Soc. of Ireland Council meet; Blackburn and Dis. Hort. Soc. meet. and lecture; Orchid Club meet.; Newcastle Hort. Soc. Ex. (2 days).
14	S	Sun rises 7 hrs. 17 min.
15	**S**	*23rd Sunday after Trinity.*
16	M	New Moon, 6.58 a.m.
17	Tu	Roy. Hort. Soc. Coms. meet.
18	W	Hull and E. Riding Chrys. Soc. Ex. (2 dys); Buxton Chrys. Soc. Ex.
19	Th	Sun sets 4 hrs. 4 min.
20	F	Assn. of Economic Biologists meet.
21	S	Burnley Hort. Soc. Ex.
22	**S**	*24th Sunday after Trinity.*
23	M	Moon, first quarter, 2.6 a.m.
24	Tu	Newcastle Hort. Soc. lecture.
25	W	Wimbledon Gdnrs'. Soc. meet.; Mitcham, Tooting and Dist. Hort. Soc. meet.
26	Th	Roy. Botanic Soc. meet.
27	F	James Douglas d., 1911.
28	S	Sun rises 7 hrs. 40 min.
29	**S**	*Advent Sunday.*
30	M	Sir I. Bayley-Balfour d. 1922.

DECEMBER.

1	Tu	Roy. Hort. Soc. Coms. meet; Roy. Caledonian Hort. Soc. meet.; Croydon Gdnrs. Soc. meet.
2	W	Roy. Agricultural Soc. Council meet.
3	Th	Nottingham and Notts. Chrys. Soc. meet.
4	F	Sun rises 7 hrs. 49 min.
5	S	Blackburn and Dis. Hort. Soc. meet.
6	**S**	*2nd Sunday in Advent.* Wakefield and N. of E. Tulip Soc. meet.
7	M	Sun sets 3 hrs. 50 min.
8	Tu	Moon, last quarter, 0.11 p.m.; Jersey Gdnrs. Soc. meet.
9	W	Wimbledon Gdnrs. Soc. meet.; Sheffield Chrys. Soc. meet.
10	Th	Sun rises 7 hrs. 56 min.
11	F	Roy. Hort. Soc. of Ireland Council meet.; Assn. of Economic Biologists meet.; Orchid Club Meeting.
12	S	Sun sets 3 hrs. 49 min.
13	**S**	*3rd Sunday in Advent.*
14	M	United Hort. Ben. and Prov. Soc. meet.; J. C. Loudon d., 1843.
15	Tu	New moon, 7.5 p.m.; Roy. Hort. Soc. Coms. meet.; Winchester Hort. Soc. meet.; Croydon Gdnrs. Soc. meet.
16	W	Sun rises 8 hrs. 2 min.
17	Th	Sun sets 3 hrs. 49 min.
18	F	Sun rises 8 hrs. 3 min.
19	S	Sun sets 3 hrs. 50 min.
20	**S**	*4th Sunday in Advent.*
21	M	Sun rises 8 hrs. 5 min.
22	Tu	Moon, first quarter, 11.8 a.m.; Winter Solstice; Newcastle Hort. Soc. lecture.
23	W	Sheffield Chrys. Soc. meet.
24	Th	F. W. Burbidge d., 1905.
25	F	*Christmas Day.*
26	S	*Bank Holiday.*
27	**S**	*1st Sunday after Christmas*
28	M	Sun sets 3 hrs. 55 min.
29	Tu	Sun rises 8 hrs. 8 min.
30	W	Full Moon, 2.1 a.m.; Mitcham, Tooting and Dist. Hort. Soc. meet.
31	Th	Licences expire.

MARKETS.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

COVENT GARDEN, Tuesday, May 19th, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldi	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray.	
—12's, 15's	5 0– 7 0
Cinerarias, doz.	15 0–24 0
Crotons, per doz.	30 0–45 0
Cyrtomium	10 0–25 0
Erica melanthera, 48's per doz.	21 0–30 0
—60's per doz.	8 0–10 0
Marguerites, white, 48's per doz.	15 0–18 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun.	12 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays	1 6– 2 6
short „	0 9– 1 3
—Sprengeri, per bun.	
long sprays	1 6– 2 0
med. „	1 0– 1 6
short „	0 4– 1 0
Bouvardia, white, per doz. bun.	9 0–12 0
Carnations, per doz. blooms	2 6 – 3 6
Cornflower, per doz. bun	5 0– 6 0
Croton leaves, var. doz. leaves	0 9– 2 6
Fern, French, per doz. bun.	0 9– 1 3
Galax, American, green and bronze, per doz. bun.	— 1 0
Gladiolus, Blushing Bride, per doz. bun.	18 0–24 0
—White, per doz. bun	24 0–30 0
—Peach Blossom, per doz. bun.	18 0–21 0
Gysophila, white, doz. bun.	12 0–15 0
Iceland Poppies	6 0– 7 0
Ixia, red, doz. bun.	3 0– 5 0
—Mixed, doz. bun.	3 0– 4 0
Lilium speciosum rubrum, long, per doz. blooms	— —
—short „ „	— —
Lilium longiflorum long, per doz.	3 6– 4 6
Lily-of-the-Valley, per doz. bun.	24 0 36 0
Narcissus—	
—Double White, per doz. bun.	8 0–10 0
—Poeticus, per doz. bun.	2 0– 3 0
Nigella, Blue, per doz. bun.	12 0–15 0
Orchids, per doz.	
—Cattleyas	24 0–36 0
—Cypripediums	5 0– 7 0
Richardias (Arums) per doz.	5 0– 6 0
Roses, per doz. blooms, Richmond	2 6– 4 6
—Liberty	2 6– 4 6
—Madame Butterfly	2 6– 4 0
—Mme. Abel Chatenay	2 6– 3 6
—Melody	3 0– 4 0
—Molly Sharman Crawford	2 0– 3 6
—Niphetos	2 6– 3 6
—Ophelia	3 0– 4 0
—Sunburst	3 0– 4 0
Gardenias, per box, 12's, 18's	4 0– 6 0
Ruscus, French, per bun.	1 0– 2 0
Smilax, per doz. trails	3 0– 3 6
Spanish Iris, per doz. bun.—	
—Blue	18 0–30 0
—Mauve	18 0–24 0
—White	18 0–24 0
—Yellow	24 0–36 0
Statice, mauve	5 0– 6 0
Stephanotis, per 72 pips	3 0– 3 6
Stock, English white	9 0–18 0
Sweet Peas, per doz. bun.	9 0–18 0
Tulips, per doz. bun.—	
—Haarlem	9 0–10 0
—Clara Butt	6 0– 8 0
—Farncombe Sander, per doz. bun.	8 0–10 0
Violas, per doz. bun.	1 0– 1 6
French Flowers—	
Anemone, St. Brigid	2 6– 5 0
Marguerite, yellow, per pad	6 0– 7 0
Marigolds, per pad	5 0– 6 0

Remarks.—Supplies of out-door blooms have increased considerably during the last few days. Tulips in particular exceeded the demand on Friday and Saturday last, but the present weather conditions will bring them to a finish by the end of the present week. Narcissus Poeticus arrived in large quantities at the week-end. Double White Narcissus is daily increasing in quantity and prices are on the down grade, although there is always a good demand for this useful variety. Consignments of this flower were received this morning from the Channel Islands and further supplies are expected from other sources in a few days. Carnations, Irises, and Roses all show the effect of the sudden rise in temperature. Gladioli are becoming more numerous and much improved in quality. The Bride (white) is a very useful flower just now. The quantities of Lilium longiflorum are more than sufficient for present requirements. L. speciosum, both white and coloured, is not available at the present time. The newest subjects in this department are Cornflowers, Iceland Poppies, and single, coloured Pyrethrums. Gypsophila elegans is arriving in good condition from home growers. French flowers are almost unsaleable when they arrive here, and all supplies from this quarter will soon finish for the season.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Oregon Newtown	13 0–19 0
New Zealand Apples—	
—Cox's Orange Pippin	25 0–28 0
—Jonathan	18 0–20 0
—Dunn's Seedling	16 0–18 0
Tasmanian Pears	5 0– 8 0
Tasmanian—	
—Cox's Orange Pippin	18 0–25 0
—Jonathan	16 0–19 0
—Ribston Pippin	15 0–17 0
—Cleo	16 0–19 0
—Others	13 0–15 0
Bananas	16 0–27 6
Figs (Forced) doz.	6 0–18 0
Grapes—	
—Belgian	2 6– 3 0
—English—	
—Hambro, per lb.	4 0– 5 0
—Muscat	10 0–12 6
—South African—	
—White Hanepoot	6 0–10 0
—Red Hanepoot	8 0–10 0
—Colmar	10 0–12 0
Grape Fruit, Cuban	25 0–30 0
—Jamaica	25 0–30 0
—Florida, finest	27 6–37 6
Lemons, Messina, per box	10 0–14 0
—Murcia	16 0–20 0
—Naples	20 0–30 0
Melons (Forced)	3 0– 8 0
Oranges, Jaffa	16 0–18 0
—Spanish—	
—300's	20 0–35 0
—360's	18 0–25 0
—504's	18 0–25 0
English Peaches, per doz.	12 0–42 0
Pears, South African—	
—Nelis	5 0– 6 0
—Beurré Bose	5 0– 6 0
—Doyenné du Comice	8 0–10 0
Pines	4 6– 5 0
Strawberries, per lb.	4 6– 10 0

Vegetables: Average Wholesale prices.

	s. d. s. d.
Asparagus—	
—Evesham	2 0– 3 6
—Special	4 0– 8 0
—Devon	4 0–10 0
Beans, Guernsey, per lb.	0 10– 1 6
—Worthing	0 10– 1 6
—Madeira, per box	3 0– 5 0
Beets, per cwt.	5 0– 8 0
Cabbage, per tally	7 6–10 0
Canary Island Tomatos	18 0–30 0
Cauliflowers, per doz.	2 6– 4 0
Carrots, new, per doz. bun.	4 0– 6 0
Cucumbers, per doz.	4 6– 6 0
—Flats, 36's, 42's	14 0–18 0
Dutch Onions	11 0–12 0
—Batavian, per doz.	3 0– 3 6
French Asparagus—	
—Cavaillon	0 6– 0 9
—Lauris	0 10– 1 6
Greens, best, per bag	4 0– 5 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundle	2 0– 2 6
Lettuce per doz.	— —
—Cos	8 0– 9 0
—Dutch, per crate	7 6– 8 6
Mushrooms, cups	2 0– 2 6
—broilers	1 0– 1 6
Marrows, doz.	6 0–12 0
Mint, Forced, per doz.	2 0– 6 0
Onions, Valencia, per case	14 0–16 0
—Egyptian, per bag	11 0 12 0
—English, per cwt.	12 6–14 0
—Spring per doz.	— 3 0
Parsnips, per cwt.	3 0– 4 0
Peas, French, per cane	2 0– 6 0
—Guernsey forced per lb.	1 0– 1 9
Potatos, Canary Island	10 0–14 0
Potatos, per ton—	
—Dunbar	240 0–260 0
—King Edward	200 0–240 0
—Others	90 0–100 0
—New Guernsey lb.	0 4– 0 6
—Jersey	0 4– 0 5
—Scilly	0 4– 0 5
—Spanish, new, per cwt.	24 0–26 0
Radishes—	
—Round	1 0– 2 0
Rhubarb, Forced, per doz.	1 3– 1 6
—"Natural," per doz.	5 0– 7 0
Seakale, Natural, ½-sieve	7 0– 8 0
Spinach, per bushel	3 0– 4 0
Tomatos, English, per lb.—	
—Pink	13 0–14 0
—Blue	12 0–13 0
—White	12 0–13 0
—Pink White	13 0–14 0
—Guernsey	13 0–14 0
Turnips, new, per doz. bun.	9 0–10 0

Remarks.—The past week has seen a very considerable increase in the volume of business transacted in Covent Garden Market. The fine weather has, no doubt, been a factor, and the commencement of the London season usually means a brighter demand for the choice garden produce. Australian and New Zealand Apples continue in good demand. Grapes and Pears from South Africa have sold at satisfactory prices. Oranges and Lemons have gone out at higher prices, the warm weather increasing the demand for these fruits. Green Gooseberries have been a fairly good business where conditions were good but some marks have not stood the hot weather well. English Asparagus has been the feature of the week but, unfortunately for the producer, prices opened at a poor level due to the low price of imported Asparagus and the very large quantity of English-grown heads that came to hand rapidly. An improvement in this departmedt is expected. Forced Beans are cheaper, but hothouse-grown Peas are in firm request. New Potatos from the Scilly Isles, Cornwall and the Channel Islands are quoted cheaper. Salads are much in demand. Trade in Cucumbers and Tomatos is brisk.

GLASGOW.

Price movements in the cut flower market were very irregular last week, and while Roses, Carnations, and other indoor blooms did not suffer to any great extent, Tulips and Daffodils slumped heavily. From 5/- to 6/- per dozen bunches, which represent the average values for Wednesday, the two latter flowers dropped to 2/- and 2/6 on Friday, when the lowest levels of the week were touched. As a result of the warm spell of weather, the flowers were soft and short-stemmed, while the fact of the 15th being term and settlement day and the near approach of the annual holiday on Monday were influences which also contributed to the decline. Daffodils, which are almost finished for the season, averaged 2/6 to 4/- per dozen, but special blooms of Glory made from 4/- to 5/6. Irises were in fair demand, and Imperator sold at 2/- and 2/6 for 12's, Belle Chinoise 2/- to 2/3, and Guernsey specials 8d. to 10d. for 6's, and ordinary 6d. to 7d. Carnations were cheaper at 4/- to 5/- for special, while medium qualities kept steady at 3/- to 3/9. Prices of Ophelia and Madame Abel Chantenay Roses ranged from 4/- to 6/- per dozen; Richmond 2/6 to 4/-; and Mrs. H. Stevens 3/- to 4/6. Gypsophila fluctuated between 7d. and 10d. per bunch, and Asparagus Fern 10d. to 1/6.

Consignments of bedding plants were heavy, and prices continued low. Marigolds and Polyanthus returning 1/- to 1/3 per box, Violas 1/3 to 1/6, Asters and Stocks 1/3, Wallflowers 1/6, Geraniums (pots) 7/- to 8/- per dozen. Spiraeas 1/9 to 2/3, Aspidistra and Belgian Araucaria 1/- to 1/3.

Business in the fruit market was brisker. English and Scotch Strawberries realised from 3/6 to 6/- per lb., Peaches from 18/- to 24/- per dozen, and Black Hamburgh and Royal Grapes from 3/6 to 4/6 per lb. Winesap at 16/- to 18/6 per case was the only American Apple on sale, but the deficiency was made up by Jonathan, Cleopatra, Ribston Pippin, and Sturmer Pippin from Australia, which averaged 17/6 to 20/-. Cape Pears favoured buyers, Winter Nelis and Josephine d'Malines averaging 6/- to 7/. Beurré Diel 5/6 to 6/6, Beurré Bosc, 6/- to 6/6, Keiffer 3/6 to 4/6, and Glou Morceau 5/6 to 7/-. Australian Beurré Bosc made 7/- to 7/6, and Williams's Bon Chrétien 7/6 to 9/-. Grape Fruit was firm at 32/- to 34/- (64's), and 36/- to 38/- (70's). The consumption of Oranges continues steady, Murcias ranging from 19/- to 23/- for 300 and 240, and 18/- to 20/- for 504 and 420, while Valencia 200, 300, 240, and 360 brought 14/6 to 30/-, and 420 14/- to 28/-.

A feature of the vegetable section was the good trade done in English Tomatos round 1/4 and 1/6 per lb. Guernsey supplies were cheaper at 1/3. Forced Rhubarb is finished; field Rhubarb realised 14/- to 16/- cwt. Large quantities of Asparagus changed hands at 1/- and 1/2 per bundle, but the dear prices of other vegetables is affecting the consumption. French Carrots sold at 10d., Turnips at 1/- to 1/2, Asparagus, Special, at 1/9 to 2/3, Endive 3/, Artichokes 1/6 to 1/9, Scotch Lettuce 2/6 to 3/-, English and Dutch Lettuces, 2/- to 2/9. Scotch Cucumbers declined 1/- at 5/- to 8/- per dozen, but English Cucumbers made from 6/- to 8/6.

TRADE NOTE.

Messrs. Richard Melhuish, Ltd., have made a clear, transparent, celluloid covering to slip over a wooden label so as to protect the writing from the weather. It should serve its purpose admirably but we think the wide celluloid covering increases the obviousness of the label and in many gardens the label is considered a necessary evil.

SCHEDULES RECEIVED.

Lincolnshire Agricultural Show. — Horticultural Exhibition to be held at Grantham, on June 24, 25, and 26.—Secretary, Mr. W. A. Watchorn, 130, Grantham Road, Sleaford.

Peterborough Agricultural Society.—Summer exhibition to be held on Tuesday, Wednesday, and Thursday, July 14, 15, and 16.—Secretary, Mr. Robert Bibby, Agricultural Office, Cross Street, Peterborough.

Southport Flower Show.—Exhibition to be held in the Victoria Park, Rotten Row, Southport, on Wednesday, Thursday, and Friday, August 26, 27, and 28.—Secretary, Mr. T. E. Wolstenholme, Town Hall, Southport.

Weymouth and District Chrysanthemum Society.—Twelfth exhibition to be held in the Sidney Hall, Weymouth, on Tuesday and Wednesday, October 27 and 28.—Secretary, Mr. J. C. Bowers, 4, Wooperton Terrace, Weymouth.

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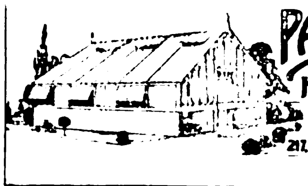

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THE
Gardeners' Chronicle

No. 2005.—*SATURDAY, MAY* 30, 1925.

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Average Mean Temperature for the ensuing week deducted from observations during the last fifty years at Greenwich, 58·0°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, May 27, 10 a.m. Bar. 29·6, temp. 56°. Weather, Raining.

Sunshine in the Garden.

He would indeed be a curmudgeon, and unworthy of tolerant hearing, who would say a word against the spell of sunshine which has been vouchsafed to these islands during the past few days. At one bound under its influence a season, which had hitherto dawdled far behind its time, has been quickened almost into normality. Apples, which for some unknown reason lagged unusually long behind the Pears, burst into bloom, and summer boskiness is rapidly replacing the sparseness of spring foliage. Under the influence of the sunshine everything in the garden is in a hurry. The spring flowers are hastening to their end. Auriculas, which dread too much of this good thing, have faded already, and the Wallflowers and Forget-me-nots and later Narcissus, which never made a braver show, have begun to droop lazily, and to look—to say the least—"past their best." It must have been during such a burst of sunshine that Shakespeare penned the lines:

> "When I consider everything that grows
> Holds in perfection but a little moment . . . ."

He saw the petals of the Apple blossom drop as the bees swarmed about the flowers, and noted the dowdy appearance of the Plums in the orchard at the moment when their withered brown flowers were not concealed by the, as yet, partly grown leaves. Observant of this fugaceousness of flowers in sunshine, the curmudgeon might write in praise of cloudy weather. But we, whose hearts have been warmed by this spring sunshine, will refuse to read it. We know that *toute passe . . . . toute lasse*, but we also know that our gardens are—or ought to be—made not for a day but for all the year, and that the sun which speeds one blossom on its way awakens and brings to issue others in its place. We know only too well—as well as the most pessimistic complainer that the sun may play sad tricks with garden plans. The seed bed awaiting to be got ready for the dwarf Beans was this morning in a kindly state, requiring only the gentle persuasion of a hoe to break down and yield a kindly tilth, but now in the afternoon the sun has baked the lumpy clods so hard that they needs must have much labour and hard blows bestowed on them before the soil can be brought into a proper state to receive the seeds. That, however, if we are sportsmen we recognise for what it is—a not unlikely trick to teach us that the greatest of garden arts is to anticipate just such tricks of weather. Of this truth also do the weeds remind us. They are springing up not in single spies but in battalions. The good gardener welcomes them—with, it is true, a grim welcome. Now whilst the surface of the ground is still workable the hoe may do ruthless and speedy execution among them. But let the moment pass and behold the roots of the weeds have dug themselves in and to dislodge them now from their trenches requires a far more vigorous attack. Moreover, the gardener who seizes the right moment to deliver his assault on the weeds is killing two birds with one stone; removing the encumbrances and tilling the soil—for the fine tilth which the hoe makes will serve as a coat of armour against the darts of the sun. Left rough and in possession of weeds the soil, if the sun keeps shining, will soon dry out; but covered with the crumbled surface and relieved of thirsty weeds it will retain much longer the moisture needed for the growing roots of plants. Then, too, now that the sun has warmed the soil, mulches may be applied without the risk of the soil being kept too cold. Happy is the gardener whose soil is so light and open that he can mulch early; for a mulch, as for example, of leaf-mould, is a rare smotherer of weeds and moreover encourages such as do grow to keep their roots near the surface and loose in the soil and so betrays them to the hoeing executioner. But in the heavier soils and where autumn digging—because of wetness—could not be practised, to mulch too early is a doubtful advantage. With the bright sunshine the many pests which lie in wait for fruit are, if not put to rout, at least rendered more amenable to treatment. And so the ideal gardener who is able by the magic of his fore-knowledge and understanding to do everything at the right time is at all costs busy now with a final spraying of the Plums and Pears and will be ready to treat the Apples in like manner so soon as the blossom has fallen and the fruits well set. One thing the good gardener will not welcome in the heat of the day and that is the advent of visitors. For in the first place he is more than busy and in the second place, the sun is like an eastern potentate who destroys his rivals to make himself king. In the bright sunshine of the middle day no garden looks its best. It is in the evening and the morning of bright days when a beautiful garden should be shown and seen.

The Glossy Petal of the Buttercup.—At the meeting of the Linnean Society held on April 23 Mr. John Parkin drew attention to the glossy character of the petal of the yellow Buttercup (Ranunculus), pointing out that this feature is perhaps unique among flowers. The peculiar microscopical structures in the petal responsible for the gloss were described forty years ago by a German botanist, Möbius by name; but botanists have apparently forgotten or overlooked this work, for no mention of this peculiarity of the Buttercup petal appears to occur in any English text book of botany. The upper epidermis of the petal has a perfectly smooth external surface, and its cells instead of containing the yellow pigment in the usual granular state, holds it in solution in the form of oil. Below the epidermis is a layer of cells densely packed with minute starch grains. The whole structure Möbius likened to a mirror. The epidermis with its clear yellow fluid acts as the glass and the starch layer as the reflector. The starch can readily be demonstrated by soaking a petal (after it has been decolourised by alcohol) of any of the common yellow Buttercups in iodine solution. The glossy part of the petal will then turn blue-black, this revealing a large amount of starch. As a contrast, petals of the white Buttercups, such as R. aconitifolius and R. aquatilis, which are not glossy, treated similarly show no starch reaction. Mr. Parkin suggests that the glossy character of the petal may be of prime importance in classifying this large genus, and is busy investigating the species from this point of view. He will be happy to get into correspondence (address, Blaithwaite, Aiglan, Cumberland) with any persons interested who are likely to meet with uncommon species of the genus in any part of the world. He would also be greatly interested should anyone be able to call attention to another petal at all approaching that of the yellow Buttercup in lustre. He points out that it is a somewhat remarkable fact that petals generally have a soft mat surface, though foliage leaves when glabrous often present a shiny appearance.

Dresden Horticultural Exhibition.—From April 23 until the end of September, 1926, there will be an important horticultural exhibition at Dresden in celebration of the centenary of the society known as "Flora," or the Saxon Botanic and Horticultural Society. The exhibition palace and grounds will be very extensive, and as the show will last for so many months there will be various subsidiary exhibitions to correspond with the seasons, beginning with spring flowers and ending with fruit and Chrysanthemums. The exhibition is to be mainly German, but foreign novelties are invited, the term "new" comprising anything not yet in commerce. Full particulars may be obtained from Herr Walter Dänhardt, Lennéstrasse 3, Dresden, but the schedule and printed matter are (naturally) all in German.

Kew Guild.—There was a large gathering of old Kewites on the occasion of the Kew Guild annual meeting and dinner held at the Imperial Hotel, Russell Square, W.C., on the 20th inst. Mr. Wm. Dallimore, the new President, occupied the chair at both meetings. Mr. J. Coutts, who has been treasurer since 1910, resigned that position, much to the regret of all the members, and his place is taken by Mr. R. F. Williams. The expenditure for the year exceeded the income by about 8s., but the Guild has a balance on the right side of about £135, in addition to £80 invested on behalf of the Benevolent Fund. Mr. E. G. Dunk will continue to act as Secretary and Editor of the Guild's *Journal*. The scheme brought forward for the educational assistance of Kew men was adopted as a general principle, and the committee will now proceed to obtain funds for carrying it into effect. A memorial to the late Mr. Dummer will take the form of an annual prize to be awarded to the Kew student who makes the most complete collection of British plants. It was also agreed to raise a subscription for the provision of a memorial to the late Mr. Wm. Watson, to take the form of a headstone on the grave at St. Albans, the surplus funds to provide a Watson Memorial prize to Kew student gardeners. In his presidential address, Mr. Dallimore gave encouragement and advice to the young gardeners, and included references to many successful Kewites whose careers he held up as examples of what might be accomplished by continuous hard work and keen application to duty.

Soil Science.—In May, 1924, the Fourth International Soil Science Conference was held in Rome under the auspices of the International Institute of Agriculture. The meetings were of particular importance by reason of the high scientific reputation of those who took part and of the discussions on all questions relating to soil science. This science, which had already begun to take shape under the title of "pedology" and is characterised primarily by the intimate connection which it establishes between the agricultural qualities of a soil and its formation and environmental conditions, thus obtained for the first time the adhesion of some four hundred soil chemists, representing all parts of the world. At this conference the most famous agricultural scientists and the institutions with the highest reputation for agricultural science and practice, made a number of new and original contributions to soil science research. The names of Professors Ramann (Munich), Andersen (Stockholm), Glinka (Leningrad), Winogradsky (Paris), Von Sigmond (Budapesth), Ganssen (Berlin), Keen (Rothamsted), Robinson (Bangor), Stoklasa (Prague), Murgoci (Bucarest), and Lipman (New Jersey), suffice in themselves to show the strength of the scientific representation at the conference, in which the discussions were of such a nature as to interest all those engaged in the study of the theory, practice or technology of agriculture. The volume of the *Proceedings of the Conference* will be published by the International Institute of Agriculture, Rome, and will be interesting from several points of view, practical as well as scientific. The subscription price is 30s.

Aldenham House Gardens.—The Hon. Vicary Gibbs has again kindly consented to open the gardens at Aldenham House to the public during the Saturday afternoons of July, August, and September, and the August Bank Holiday, on the same conditions as previous years, viz., that no dogs be admitted and that children must be under the control of grown-up persons. On Saturday, July 18, the Elstree Floral Fête will be held, when admission can only be obtained by payment at the gates.

Scotch Potato Seed.—Frequent complaints from English buyers have been made during the past season regarding the quality of Scottish grown seed Potatos, and as the result of action taken by Atholl farmers the subject was discussed at a meeting of the Potato Committee of the National Farmers' Union. A member stated that an English buyer through his Perth agent had complained that the seed supplied was soft and rotten, and that the tubers had been badly dressed. In this particular case the grower explained that he had dressed the seed himself and he was satisfied that it fulfilled the requirements of the Order.

Mr. George G. Whitelegg.—The winner of the *Daily Graphic* Cup for the best rock garden at Chelsea Show deserves more than passing notice. For many years past Mr. Whitelegg has been particularly successful in the construction and planting of rock gardens, not only at Chelsea shows, but at the larger exhibitions in the provinces and on the continent. About twenty-five years ago he joined the firm of Messrs. Robsons at Altrincham, and subsequently served with Messrs. Clibrans in the same place, and then came south to gain further experience with Messrs. Stuart Low and Co., of Enfield. About seventeen years ago Mr. Whitelegg and Mr. C. H. Page set up in business on their own account at Chislehurst, but the partnership was disolved in 1915. Mr. Whitelegg continued to carry on the cultivation of hardy plants and the construction of gardens, and in 1919 Mr. P. Murrell joined him as a partner at the Chislehurst nursery. Four years later this partnership was dissolved, and since then Mr. Whitelegg has remained the sole proprietor. His specialities are hardy plants in general, alpine plants in particular, and garden construction, with a special leaning towards the making of rock and formal gardens.

MR. GEORGE G. WHITELEGG.

Iris Society.—The annual meeting and dinner of the Iris Society held in the Bessborough Rooms, Grosvenor Hotel, London, on May 22, were very pleasing and delightfully informal functions. The veteran raiser, Mr. Geo. Yeld, V.M.H., presided over an attendance of about twenty-five, including several ladies, and such well-known Iris enthusiasts as Mr. W. R. Dykes, Sir Wm. Lawrence, Mr. Amos Perry, Mr. P. Murrell, Mr. R. W. Wallace, Mr. Pilkington, Mr. G. Whitelegg, Mr. Christie Miller, and Mr. Caparn were present. An exceptionally interesting feature of the proceedings was a display in an ante-room of a very large number of beautiful paintings of hybrids and species of Iris as well as scenes portraying great breadths of Iris, all from the brush of Mr. Caparn, who was the first to raise the popular intermediate section of free-flowering Bearded Irises. After dinner Mr. Pilkington was elected President, and thanks were tendered to Mr. Baker (at present in Crete) for his services during the past year. With the office of President Mr. Pilkington also joins that of Treasurer, a position he has held for the past two years. as well as that of Editor of the Society's *Journal*. Mr. G. N. Bunyard was re-elected Secretary. Nine new members were elected, bringing the number of members to about ninety. After the general proceedings, Mr. Caparn gave a short address and pointed out that the lack of an Iris Society in the past had prevented the earlier distribution and popularity of the intermediate and other Bearded Irises. He regretted that, being an artist, he was somewhat unmethodical, and consequently had not kept records of the species he used in raising the intermediate section. He owed his enthusiasm for Irises to the late Sir Michael Foster, who gave him the plants with which he commenced operations. He confessed to having used I. Gatesii, I Lortetii, and I. Queen Flavia in the early years of his work, and he suggested that those who would use the two forms of I. balkana as parents might anticipate excellent results and perchance evolve a red Iris. An informal discussion followed Mr. Caparn's address, from which it emerged that there are no fewer than eight hundred varieties and species of Iris in the Iris trials at Wisley, thanks to the efforts of Mr. Baker, Mr. Dykes and Mr. Chittenden.

Presentation to Sir Herbert Maxwell.—A large and influential company, under the Chairmanship of the Hon. Hew Dalrymple, assembled in the Town Hall, Newton Stewart, on Wednesday, the 13th inst., when Sir Herbert Maxwell, Bt., of Monreith, Lord Lieutenant of Wigtownshire, was entertained to a public dinner and presented with several handsome pieces of plate and a cheque for £500, with which he proposes to endow a bed in Dumfries and Galloway Royal Infirmary. It was a fitting testimony to valuable work done during a lifetime by a man who is esteemed far beyond the confines of the south of Scotland, and whose contributions on horticultural subjects to our columns are appreciated alike by the editorial department and our readers. In making the presentation, Sir Anthony Agnew said that from the day he was twenty-one till now, when he had attained the age of four score years, Sir Herbert had identified himself with the welfare of his native county and every movement which had tended to increase its prosperity. His fame, however, was far more than local. There were few departments of knowledge with which his name was not connected. He was recognised as one of the highest authorities in the country on all matters connected with horticulture and silviculture, with zoology and natural history. The position he occupied as an archaeologist was proved by the fact that he was selected as chairman of the Royal Commission on Ancient and Historical Monuments in Scotland, and as a man of letters he had written a greater number of readable books on a greater variety of subjects than any other living author. That record did not exhaust Sir Herbert's activities and achievements, but it was enough to show that he had well earned his national reputation. He had made a name for himself which would go down to history as one of the most distinguished that Galloway had produced. Reference was also made to his long service in the work of local government, where every office he occupied had been filled with credit and distinction. Lord Darling afterwards proposed the health of Sir Herbert Maxwell in a humorous speech in which he expressed the pleasure and the privilege it was for him to be present and propose the toast of the evening. In the course of his reply, Sir Herbert said he was afraid that on the present occasion Lord Darling had summed up less impartially than was his wont. The company present was the only court in which appeal against his judgment could be carried, and he was afraid he could not look for impartiality there. Their presence was manifest proof that they were partially inclined to the prisoner at the bar. The beautiful objects which he had, received would be handed down to his grandson as evidence of the kindly generosity of the people of Galloway. He thanked them cordially for the liberal contribution which they had made towards the endowment of a bed in Dumfries and Galloway Royal Infirmary in his name. After some interesting reminiscences Sir Herbert Maxwell said that the feeling in his heart was not that of pride but of gratitude. He was tempted to be proud when he looked round that gathering, but the dominant feeling was gratitude. They had done much that night to strengthen the ties which bound him to his native province, and, if possible, deepen the love that he felt for the men and women of Galloway, for its hills and waters, its moors and fields.

Horticultural Show in a Theatre.—The May meeting of the Antwerp Royal Horticultural Society was held in the peristyle of the local theatre (Théâtre Royal Lyrique Flamand). Though the space was small the show was well attended, and the exhibits of good quality. They included Orchids from three different growers, Pelargoniums, Hydrangeas, Begonias, Hippeastrums, and many other plants, including Cacti, not frequently seen at English exhibitions of the same size. There were also some garden designs which were greatly admired.

Appointments for the Ensuing Week.—Tuesday, June 2.—Royal Caledonian Horticultural Society's meeting. Wednesday, June 3.—Royal Agricultural Society of England Council's meeting; National Viola and Pansy Society's meeting. Thursday, June 4.—Nottingham and Notts Chrysanthemum Society's meeting. Saturday, June 6.—Blackburn and District Horticultural Society's meeting and lecture.

Gardeners' Chronicle Seventy-five Years Ago.—*Mr. Groom's Tulips.* The present season has been unfavourable to a fine display of Tulips. This fact, the last South London floricultural show amply proved. Notwithstanding, however, the prevalence of dry north-easterly winds, which we have experienced, Mr. Groom has had a good exhibition of this favourite flower. His best bed, one-hundred-and-twenty feet long, and containing not less than two thousand flowers, has been nearly as fine as we have ever seen it in any former year. The following favourite sorts were in good condition when we saw them. Bizarres:—Polyphemus, Duke of Devonshire, Catafalque, Emperor of Austria, Nourri Effendi, Marshal Soult, Strong's King, Platoff, Everard, Pompe, Garrick, Optimus, Prince of the Netherlands, Countess of Wilton, Louise, Lord John Russell, Earl of Lincoln, and Duke of Norfolk. Bybloemens:—Victoria Regina, Laurences's Friend, Rubens, Louis XVI., Imperatrix Florum, Michael Angelo, Earl of Haddington, Violet Alexander, Duke of Buccleuch, Claude, Monte, Bijou des Amateurs, Desdemona, Bloemart, Homer, Lady Sale, and Caramine. Roses:—Duchess of Sunderland, King of Saxony, Cameuse de Crai, Cerise Blanche, La Tendresse, Claudiana, Emily, Aglaia, Lady Peel, Catalani, Triomphe Royal, Cerise Bell Forme, and Ponceau très Blanc. In addition to the above the collection contained some novelties. Dr. Horner and Prince of Wales, new bizarres, are promising flowers, and so are one or two others, which we hope to see again. *Gard. Chron., June* 1, 1850.

Publications Received.—*Administration Report of the Forest Department of the Madras Presidency,* 1924. Vols. 1 and 2. Obtainable from Wheldon and Wesley, Ltd., 2, Arthur Street, New Oxford Street, W.C. 2. *Experiments in Plant Hybridisation.* By Gregor Mendel. Oxford University Press, Amen House, Warwick Square, London, E.C. 4. Price 1s. 6d. net. *Notes from the Royal Botanic Garden, Edinburgh.* November, 1924. His Majesty's Stationery Office, Kingsway, W.C. Price 8s. 6d. net. *Adam's Garden.* By L. E. Fox. Longmans, Green and Co., 39, Paternoster Row, E.C. 4. Price 2s. 6d. net.

ALPINE GARDEN.

PRIMULA INVOLUCRATA.

FOR moist places in the garden, such as the base of rock-work, where the drainage from [the upper portions keeps the ground below in a damp condition, or, better still, for the margin of a stream or pond, Primula involucrata has well proved its value over a considerable period of years. It may, it is true, be cultivated in a border which is not too dry, but to see it at its best it should be grown in a moist position.

I grew this Primula for many years in a pocket, at the edge of a Water Lily pond, where it had its roots constantly wet at all seasons, and there it grew well, flowered freely, and increased splendidly. In a drier place it grew well and flowered but did not multiply with the same rapidity.

P. involucrata is by no means a showy Primula, but has many merits. It has small leaves, developed close to the soil, or nearly so, and above these rise the long stems, bearing a cluster of flowers at the top. The flowers are white or bluish with a yellowish centre and very sweetly scented. They are small individually and the truss is not large either, although composed of a fair number of flowers. If one were disposed to be hypercritical one would probably say that the tall, slender stems are too long for the size of the truss and flowers, but this would be ungrateful criticism. The plant is hardy, may be increased freely by division, thrives in sun or partial shade and has a preference for a soil of loam, leaf-mould or peat and sand. *S. Arnott.*

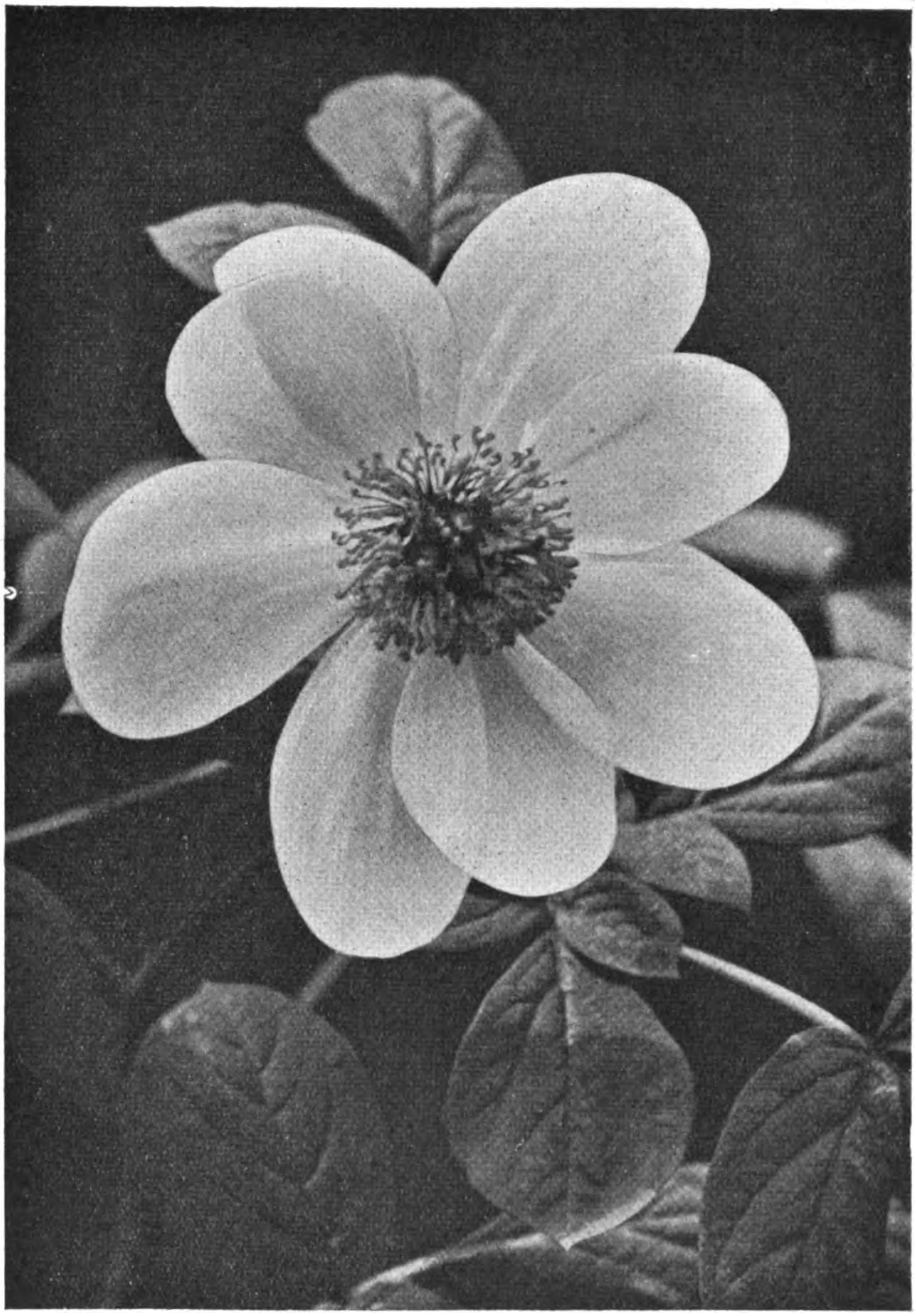

FIG. 164.—PAEONIA OBOVATA ALBA.

R.H.S. First Class Certificate at Chelsea Show. Flowers white and glistening (see p. 357). Shown by Mr. J. C. Allgrove.

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

The Cool House.—After Sophronitis grandiflora has passed out of bloom roots will develop from its partially developed growths, and any necessary re-potting should be given attention. Shallow Orchid pans with wire handles attached form the most suitable receptacles, as the plants usually grow best when suspended from the roof-rafters. Provide liberal drainage, and employ Osmunda-fibre and Sphagnum-moss as a compost. These materials should be cut into small portions. Afford plenty of water whilst the roots are active, and until the growths are fully developed; afterwards give the roots only sufficient moisture to keep the small pseudo-bulbs and leaves plump and green.

Cattleya citrina.—This interesting Orchid is unique in habit, as it produces growths in a downward direction, and its Tulip-like, citron-scented flowers in a similar manner. For this reason, the plants are usually fastened to Teak wood rafts or blocks, but they will do equally well if placed on a mound of Osmunda-fibre and Sphagnum-moss raised well above the rim of an ordinary Orchid pan, the latter preferably without side holes, and arranged so that the growths or pseudo-bulbs may develop over the sides. This Orchid usually blooms during the present month, and owing to their thick texture, the flowers remain in full beauty for at least four or five weeks. After the flowering period is over, new roots begin to appear from the base of the last made pseudo-bulbs, when fresh rooting material should be supplied. If the plant is healthy and the roots firmly attached to the raft or pan they should not be disturbed, but furnished with a little fresh rooting material on the top of the receptacle. Remove as much of the old soil as possible with a pointed stick and wash away all small particles by the aid of a syringe and substitute new compost. This Cattleya is frequently a difficult plant to keep in good health for any great length of time. It is often placed in an intermediate temperature. I find that it will grow most successfully when suspended from the roof rafters in the warmest part of the Odontoglossum house. During the plant's season of active growth a liberal supply of moisture is needed, but after the pseudo-bulbs are fully developed, the roots should be kept rather on the dry side and the plant afforded a decided season of rest.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Violas.—The Viola is everybody's flower for it may be had in bloom during the greater part of the year and is useful for forming edgings to borders, as carpets to larger plants, or even in beds alone. Those which were raised from cuttings inserted last autumn and planted in early spring are now beginning to flower. They are moisture-loving plants and on light soils need an abundance of water. The plants should be mulched and have the flowers removed as they fade, when they will afford a display of colour during the whole season. Archie Grant, violet-blue; Primrose Dame, yellow; Maggie Mott, lavender; Countess of Hopetoun, white; and Bronze Prince are good varieties.

Specimen Plants.—Large vases and tubs which are stood in various positions on steps, terraces, and verandahs may now be planted with such subjects as Fuchsias, Ivy-leaved Pelargoniums, and Plumbago capensis. A good, rich compost should be used, and where several plants are placed in one receptacle care should be taken that the compost is well rammed between the balls of roots. Tubs of Agapanthus, Hydrangeas, and Oleanders, which have been stored in a cool house, may also be stood outside in similar positions.

Asters and Stocks.—These annuals may now be planted in their flowering quarters, choosing, if possible, showery weather for the work. Plant firmly and water the roots abundantly in dry weather, until they are well-established. Rains and watering alike tend to harden the surface soil to the detriment of growth, and it should be frequently broken with the hoe or cultivator

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Hardwooded Greenhouse Plants.—The period immediately following the flowering of these plants provides a favourable time for a general examination of them. All spent flowers should be removed without delay, especially in the case of Azaleas and Rhododendrons; the operation should be performed carefully so as not to injure the young growths which spring from the bases of the flower stalks. Thrips are apt to get a lodgment on the plants during the flowering season, when a free use of the syringe will not have been possible, therefore, the plants should be thoroughly cleansed of this pest before any potting or top-dressing is done. A top-dressing of new soil applied to those plants which do not actually require re-potting, will be of benefit, removing as much of the old soil as possible and making sure that the drainage is satisfactory. After potting or top-dressing them, the plants should be given accommodation in a light house (span-roofed if possible) where they can be well syringed in the mornings and afternoons, and for the first few weeks the house should be closed immediately after the afternoon syringing.

Camellias.—Opportunity should be taken after flowering to prune back any plants which may be needing it, using a sharp knife for the operation. Give the plants a thorough cleansing and see that they do not suffer from lack of water at their roots. Plants growing in pots or portable tubs will be benefited if accommodation and treatment can be afforded them, similar to that advised for Azaleas, the object being the production of new growth and the formation of flower buds in good time to allow for the proper ripening of the new wood before winter arrives.

Propagation,—Cuttings of Euphorbia jacquiniaeflora may now be procured from plants treated as advised in a former calendar. Take off the young shoots with a slight heel of the old wood attached. Dip the base of the cuttings in dry Portland cement to prevent bleeding, and insert them singly in thumb pots filled with a mixture of peat, leaf-mould, loam and sand. Place the cuttings in a propagating frame in a temperature of about 70°, and give them one liberal watering; shade the cuttings from sunshine and spray them lightly overhead daily. Coleus thyrsoideus for winter flowering may also be propagated now. This plant responds best to warm greenhouse treatment in its early stages of growth. Cuttings of Moschosma riparium inserted now will make good plants for flowering next winter. It is worth while to strike a batch of cuttings of Salvia splendens at this late date, from which plants may be produced to flower at Christmas and afterwards.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Peaches and Nectarines in Pots.—Disbudding and stopping these trees will now call for constant attention. Work on the same principal as recommended for the permanent trees, allowing for the different shape of the tree and also the restricted root run, which will cause short. natural spurs to form. Thin the fruits very carefully, leaving those best placed, and allow the trees to carry a crop that they can finish properly. A zinc collar placed around the rim of the pot will allow room for a slight top-dressing and prove very useful in watering. The trees will require examining three or four times daily for water. Use concentrated manures as recommended by the makers; weak liquid manure applied often will greatly assist the trees to swell their crop. Syringe the trees copiously twice daily, until the fruits begin to colour, to keep down red spider and thrips, which are sometimes most troublesome. Give plenty of ventilation at all times, unless ripe fruits are required as quickly as possible, when the houses should be closed and sprayed about 5 p.m.

Pot Figs.—Fig eyes that were rooted this spring will now require potting on from five-inch to seven-inch pots, as their present receptacles become filled with roots. Use a strong loam, to which a five-inch pot of bone-meal per barrow load of soil has been added, and plenty of old mortar rubble. Replunge the pots in the bed of leaves and keep the trees well syringed. Maintain a very brisk temperature and admit sufficient air to prevent scorching of the foliage during the day, closing the house when the atmosphere is well charged with moisture, about 4 p.m. Trees bearing ripe fruits will require watering carefully. The Fig should never be allowed to suffer from want of water at any time. Continue to stop and train in the leading shoots required for extension and remove all growths not required entirely. Figs in the best possible condition for the table should always have what is termed "a tear in the eye"; this is the sure sign of excellence."

Melons.—When Melons begin to net and show signs of ripening, admit more air and be very sparing with the water can, giving the roots only sufficient moisture to keep the plants healthy and prevent them flagging. See that the nets and supports are not preventing the stems from swelling, for this is often the cause of much trouble. Do not allow water to reach the collars of the plants, which would cause damping of the stem. Continue to grow on the successional batches as advised for early varieties and make other sowings according to accommodation and requirements.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Figs.—The young shoots of Fig trees on walls and under copings are making headway, and as they grow they will need regulating and tying to keep them in proper position. The growths for extension of the trees should not be very long jointed if the roots have been properly treated. The border should be restricted by building up a four-inch brick wall, two feet three inches under the ground by three feet square, or they may be restricted to a semi-circle three feet from the stem of the tree. The bottom of the border should be concreted and drained, putting a layer of brick rubble in the bottom, and leaving half a brick out of the wall for the water to escape. If the fruits have set very freely, reduce them to two or three to a growth, according to the strength of the tree. Fruits that were formed last autumn should be removed forthwith to give this season's crop every chance to reach maturity. Figs planted in restricted borders need fortnightly attention in watering, especially in the case of old, established trees. The Fig being a gross-feeding plant should be given copious supplies of liquid manure from the farm-yard. A sprinkling of concentrated fertiliser of a quick-acting nature may also be used before watering the soil with clear water. After the watering is completed, mulch the border well with farmyard manure; this will keep the roots cool and moist. After hot days syringe the trees heavily to keep down attacks of red spider.

Strawberries.—The main plantation of Strawberries should now have attention in cleaning the plants and ground of weeds and bedding the rows with straw or clean litter from the stables. Keep an eye on all weak plants that show signs of infection by red leaf, and if attacked do not hesitate to dig them up and burn them. Mildew may put in an appearance after so much wet and sunless weather, and if this disease appears spray the plants with No. 2 specific as advertised.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Brassicas.—The present is a busy time with the different kinds of Brassicas. As the seedlings become large enough they should be planted out in their permanent quarters in whatever vacant ground is available. If possible, choose a time for transplanting when the ground is moist or the weather showery, as this will save much labour in watering, and the plants always get established quicker in damp weather. Leave all the smaller plants till later, as more ground will become vacant after early Peas and Potatos are over. Usually a good site for Broccoli becomes vacant when an old Strawberry bed is cleared off. Take note of any variety of which, when planting, there is likely to be a shortage, as even now, with the ground nice and warm, a late sowing of many varieties may be made and the seedlings will soon be ready for planting out owing to quick germination.

Lettuce.—The different batches of Lettuce, of both the Cos and the Cabbage types, are growing quickly. Never allow the plants to become dry, so as to ensure good, quick growth which is essential to obtaining nice crisp heads with good hearts. Sow seeds at periods of fourteen days, thinly, leaving the plants to mature where they are sown. Keep a sharp watch for birds as they are very partial to the young, succulent leaves in dry weather.

Potatos: — Potatos will now be growing fast and advantage should be taken before the haulm gets too large to fork between the rows. This process is a great help when it is time to earth up the rows, as heavy ground and ground that has become hard and caked through rains, is very difficult to break up finely to enable the earthing up to be done properly.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Spring Bedding.—Owing to a very late spring such plants as Wallflowers, Tulips and Myosotis are still in full flower and their removal to make room for summer bedding plants can only take place at the last moment. Beds in which spring flowers have been grown is usually in a very impoverished condition when the plants are removed and the soil requires to be well enriched if good results are to be obtained from the plants that are to give the successive display. To dig in quantities of farmyard manure at this period of the year, however well rotted it may be, would be a mistake; a better plan is when digging over the ground to apply liberal dressings of bone-meal; a quantity of fresh loam may also be dug in if it is available. Later in the season slight sprinklings of an approved artificial manure may be given and worked in with the hoe.

Roses.—A close watch should be kept on the young growths for the appearance of aphis and mildew. Both these pests are easily dealt with in the early stage by using suitable specifics. Should any suckers develop from the stocks remove them at once, for if these are allowed to attain any considerable size they will appropriate much of the sap and ultimately weaken the Rose plant so much that it might die outright.

Indoor Chrysanthemums.—The compost for the final potting of Chrysanthemums should be prepared in order that the plants may be potted and stood outside before the second week in June. Should the loam be of a heavy texture add liberal quantities of sharp river sand to it, also a quantity of old mortar rubble broken finely, but on no account use artificial manure. This latter is more beneficial if given later as a top-dressing when the plants are growing rapidly in July and August, when a topdressing may be given every ten days. Care should be taken to see that the pots are well drained. A few half-inch bones added to the drainage material will benefit the plants. In districts where the rainfall is heavy Chrysanthemums will succeed better if the pots are stood out-of-doors on boards.

Runner Beans.—These Beans have, unfortunately, failed to crop in many northern gardens during the past three seasons; it is, however, too important a vegetable to discard, in spite of one or two failures. A sowing may now be made in boxes. If the boxes are placed in cold frames the plants should be ready for transplanting out-of-doors about the second week in June.

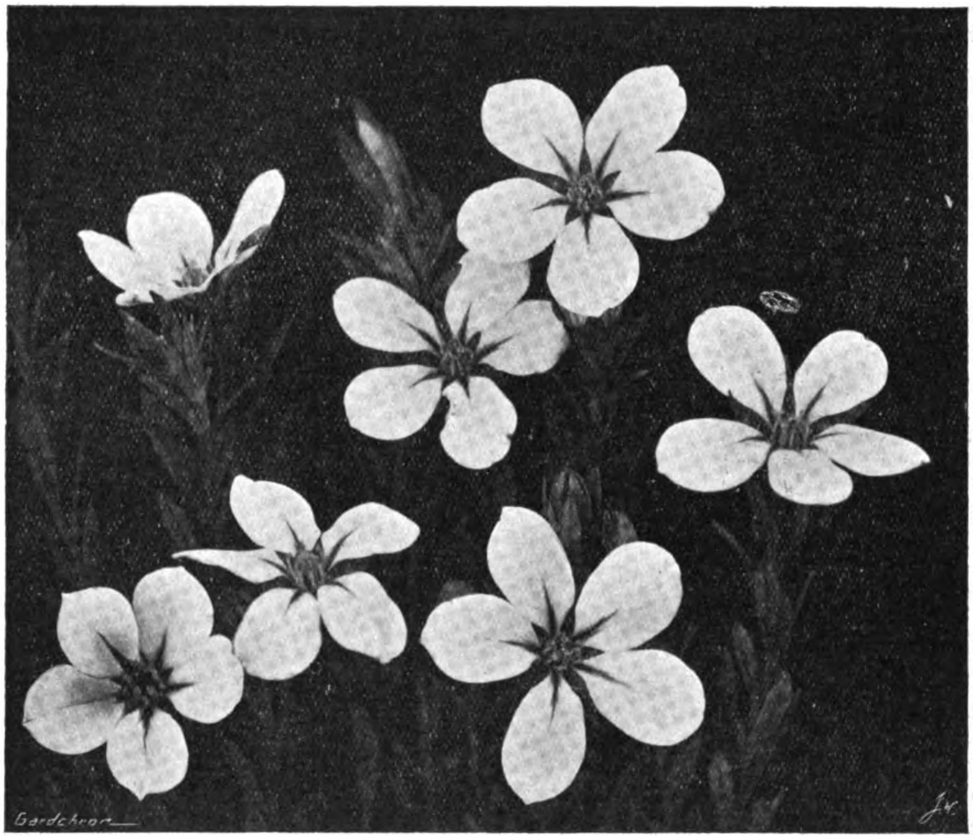

FIG. 165.—DIOSMA UNIFLORA.

R.H.S. Award of Merit, Chelsea Show. A South African species, also known as Adenandra uniflora. Flowers white, with red line at base of petals. Shown by Rev. A. T. Boscawen (see p. 357).

FLORISTS' FLOWERS.

MODERN DAHLIAS.

THE most popular varieties of Dahlias for garden decoration are those possessing long, stiff, wire-like flower stems, that start flowering comparatively early in the season, are of medium height and give a great wealth of beautiful flowers. Probably in the near future Dahlias will be forthcoming, the blooms of which will pack well when cut, and last fresh for some considerable time in this latter state.

Near where these notes are written is the establishment of a grower of cut blooms for market, and each year he devotes bigger plots of ground to the variety Millie Scupham, that was raised or introduced by Mr. Henry Cannell, of Swanley, over thirty years ago. This Dahlia has double blooms of a yellow-bronze shade. Except for its colour there is nothing specially striking about it, but apparently it sells well, and I often think when noting the plantations named that if the owner cared he could present specimens before the Floral Committee of the National Dahlia Society with a certainty of the variety gaining distinction.

Raisers of new varieties in the past, in their quest for exhibition varieties, have doubtless discarded many a "rogue" that would have become popular. Last year I was much impressed with two sorts of Dutch origin, named John Mensing, crimson, and Menny Carlee, white, respectively. Their merit was not so much on account of the flowers, as the immense length of stem. It may be that this resulted from a particular method of culture adopted; anyhow, there will be opportunity at Wisley this year for Dahlia lovers to judge the plants as growing. If they produce such stems naturally then they both have considerable commercial value.

No Dahlia is in greater demand in these times than the dwarf-growing, bedding, single

Coltness Gem, and at no distant date it should be as popular for planting in bedding schemes as the scarlet Pelargonium. Pink Pearl is a newer variety of this type, and this is likely to become very popular. Specially fine plants of it were to be seen in one or two public gardens last year, where they stood out conspicuously, not only on account of their colour, but also their prolific quality of flowering, as well as the splendid habit of the plant. The blooms are small. Another good small-flowered Dahlia suitable for massing is Jeweltee. This forms a short bush, smothered with blossom, and is as good as anything the Dutch growers have introduced. Another fine sort from a similar source is the variety Mr. H. C. Dresselhuys, with soft pink flowers. So far as my experience goes with it, however, some of the later, soft top growth must be removed from the plant to get the blooms well up above the foliage.

Delice, the soft pink French-raised Dahlia is a very old variety; yet it is doubtful if there is another that is its equal for supplying cut blooms. It is a medium-sized flower. These medium-sized blooms appeal to present-day growers, and the following are some of the many sorts that seem specially commendable, and are mostly to be found in specialists' lists. Among the small Decorative and Miniature-Paeony types the following are to be recommended:—Dazzle, a fine red Dahlia; Crimson Flag, a deeper shade of red and with more double flowers; Norah Bell, carmine and lemon; Our Annie, light pink; Charmer, orange and rose tints; and Pearl, delicate pink.

These are all very charming Dahlias; so is Brentwood Star, which is somewhat single in formation and pink in colour. Lemur is a distinct Dahlia of the single type, with deep crimson flowers and dark, metallic foliage. Varieties of a more double nature than those named above are:—Carine, orange colour; Raider, cinnamon shade; Tipsy, scarlet; Reginald Cory, crimson and white; Aglaia, fawn shade; Vida, amber tint; Feodora, cerise. These are all first-rate varieties in the garden.

Varieties bearing larger blooms find admirers; these make showy plants as a background in borders and so on. The number of additions each year in this section is considerable, and the following sorts are all excellent: Aphrodite, white; Cambria, pink; Dr. Tevis, rosy-salmon, a favoured American sort; King Harold, dark crimson; Millionaire, lavender shade; Mrs. Carl Salbach, rose-pink; Nancy, light pink, medium-sized bloom; President Wilson, scarlet; Psyche, rich yellow, very showy; Porthos, lilac-blue tint; and Roy Hay, orange.

Cactus Dahlias may be termed modern, inasmuch as each year brings forms more beautiful than those generally known, but the Cactus Dahlia is for exhibitors, pure and simple. It fails as a garden plant and is practically useless unless the branches are thinned and general high cultivation is given.

Beauty of Penshurst and Virginia are two good Dahlias of this type, soft pink in colour. Their narrow and numerous florets curl to the centre and the points almost touch. *H. S., Woking.*

NEW PERPETUAL-FLOWERING CARNATIONS.

The following varieties of perpetual-flowering Carnations have been registered by the British Carnation Society:—

Mrs. H. Lynch.—A seedling variety raised from Robert Craig crossed with R. F. Felton. The colour is brilliant scarlet; the flower measures three-and-a-half to four inches across and is slightly fragrant. The plant is of vigorous growth and develops its blooms on wiry stems. This variety is said to be very free-flowering, and the colour is exceptionally good throughout the winter months. Registered by Mr. A. Swann, gardener to Major H. Lynch, Colwood, Warninglid, Haywards Heath.

Mrs. W. H. Page.—A new seedling variety of bright, glistening pink colour, said to be very beautiful in winter and of a much deeper tone in summer. The bloom measures three-and-a-half inches across, and possesses moderate fragrance. The calyx is good, the flower stems long and strong. The colour is said to be distinct in Carnations, and the plant possesses a good habit. Registered by Mr. W. H. Page, Hampton.

Headland's Beauty.—This is a rose-pink variety possessing very good fragrance, and producing its blooms on long, stiff stems. The flowers are three to four inches across and very freely produced. The plant is said to be easily propagated and a good, strong grower, blooming the whole year round. The calyx is non-splitting. Registered by R. Chetwynd Stapylton, Esq. (gr. Mr. W. Meager), Headlands, Great Berkhamsted, Hertfordshire.

Mary Pearson.—A seedling of deep heliotrope colour, the bloom measuring three inches in diameter and possessing good fragrance. The habit of the plant is good and the flower stem strong, the variety being a sturdy grower generally. The colour is a little deeper than that of Arnos Grove, a variety of the same size of bloom. Registered by Messrs. Stuart Low and Co., Bush Hill Park.

Eros.—A seedling variety of salmon-pink colour. The bloom measures three-and-a-half inches across, and both habit and stem are said to be good.

Nanette.—A salmon-pink variety possessing good fragrance, the bloom measuring three inches in diameter. These two last were registered by Mr. H. T. Mason, Hampton Hill.

Canada.—A seedling variety of flesh pink colour; the bloom measures three-and-a-half inches in diameter and is fragrant; both the habit and stem are good.

Rouge—A red variety, with a bloom measuring four inches in diameter and possessing good fragrance; both the habit and stem are said to be good. These two last were registered by Mr. C. Engelmann, Saffron Walden.

TREES AND SHRUBS.

FRAGRANT FLOWERING SHRUBS.

Amongst the many beautiful flowering shrubs which adorn our gardens there are some which have the additional merit of high fragrance. Many are found to be sweet-smelling when fragrance is actually sought after, but there are a few which are outstanding in this respect, and arrest the attention of the passer-by, even at a considerable distance.

In some instances the flowers are inconspicuous, as for example, those of Azara microphylla, but this shortcoming is somewhat lessened by the fact that this species is a beautiful evergreen, but in most other genera the flowers are very effective.

A little thought must be given to the placing of these subjects when planting.

Those known to be slightly tender may be grown on a dwelling-house wall and others may be planted in close proximity to the house, especially near windows of the most frequented rooms.

In enumerating the few subjects I have chosen, it will be found possible to have a succession of sweet-scented flowers over an extended period.

Lonicera fragrantissima is an evergreen, but often loses most of its leaves during very severe winters. It is not a showy shrub, but its creamy white flowers, produced in mid-winter, are deliciously perfumed.

Berberis japonica is an erect-growing evergreen about six feet to eight feet high, having large, handsome, compound, dark green leaves, frequently tinted with golden-bronze. Its pale, yellow flowers are produced in either horizontal or drooping racemes. Flowering commences about Christmas, and this fine shrub is at its best about February, when the bush exhales a powerful perfume resembling that of Lily-of-the-Valley.

Azara microphylla is an evergreen averaging from ten feet to twelve feet in height. In favoured localities it will attain tree-like dimensions. In exposed districts the protection of a wall would be beneficial to this shrub. At Wisley it grows quite well in the open, and only when exposed to long spells of cold, east wind is it likely to suffer. With its numerous, small, glossy, dark-green leaves and characteristic branch arrangement, it is a pleasing shrub at all seasons. It bears inconspicuous flowers during February and March, of which the yellow stamens are the most showy part, and fills the surrounding air with its Vanilla-like fragrance.

Nuttalia cerasiformis is a deciduous shrub producing many stems, which spring from below the ground and form a dense bush, usually attaining the height of six feet to eight feet. Its white flowers are produced in February and March on the leafless shoots of the previous year's wood. Although the flowers are not so effective as those of other shrubs of the same season, this is compensated for by their unique Almond fragrance.

The staminate form is of more refined habit, and flowers more freely than the pistillate form, but when growing together, the latter produces oval fruits, which are purple when ripe.

Daphne Mezereum is a deciduous, erect shrub usually growing about four feet high, and preferring a cool position. It probably succeeds best in the northern counties.

Closely-packed, deliciously-fragrant, purplish-red flowers are produced from January to April on leafless laterals of the previous year's wood. There is a variety which bears creamy-white flowers, which is a slightly stronger grower than the type. These are also pure white, and double white forms.

Skimmia japonica is a low-growing evergreen of Laurel-like habit, seldom higher than four feet. It will tolerate partial shade. Abundant white flowers are borne during March and April in terminal panicles about three-inches long in the case of the staminate, but only about one-inch on the pistillate form. Although the male plant is by far the most effective when in flower, it is advisable to plant both forms, either together, or at least in close proximity, as the female plant when fertilised is one of the best berried shrubs during autumn and winter.

Viburnum Carlesii is a deciduous shrub of about four feet in height. The flower buds are visible in autumn, and in this stage are carried through the winter. The wax-like flowers open towards the end of April and are first pink, but turn white as they age. This is one of the most fragrant of all flowering shrubs.

Although not very well-known at present, another member of this family, V. fragrans, is worth noting. Its flowers are similar to those of V. Carlesii, but they open very early in the year; these also are very sweetly-scented.

Clethra alnifolia is an erect-growing, deciduous shrub, ranging from six-feet to eight-feet in height, preferring a moist or peaty soil. White flowers are produced on the end of the current year's wood during August, at a time when there is a scarcity of shrubs in flower. Although not quite so fragrant as some of those already mentioned, it is a very valuable shrub for that period of the year.

There are other shrubs strongly scented, such as some of the Azaleas, Lilacs, Osmanthus, and Loniceras.

Thorns and Philadelphus (especially the Mock Orange) are not so generally agreeable, many people finding the scent of these overpowering when planted too close to a residence. *J. Wilson, Wisley.*

HARDY FUCHSIAS.

IN the western counties Fuchsias are grown in the open in large quantities in private and public gardens. There are numbers of varieties which may be grown in less favoured districts if a sheltered position is provided and protection given during severe weather. With the advent of so many new shrubs these old favourites have been somewhat neglected, but they possess a charm of their own and are peculiarly adapted for planting in many old world gardens. Isolated plants of the strong-growing varieties form very graceful specimens.

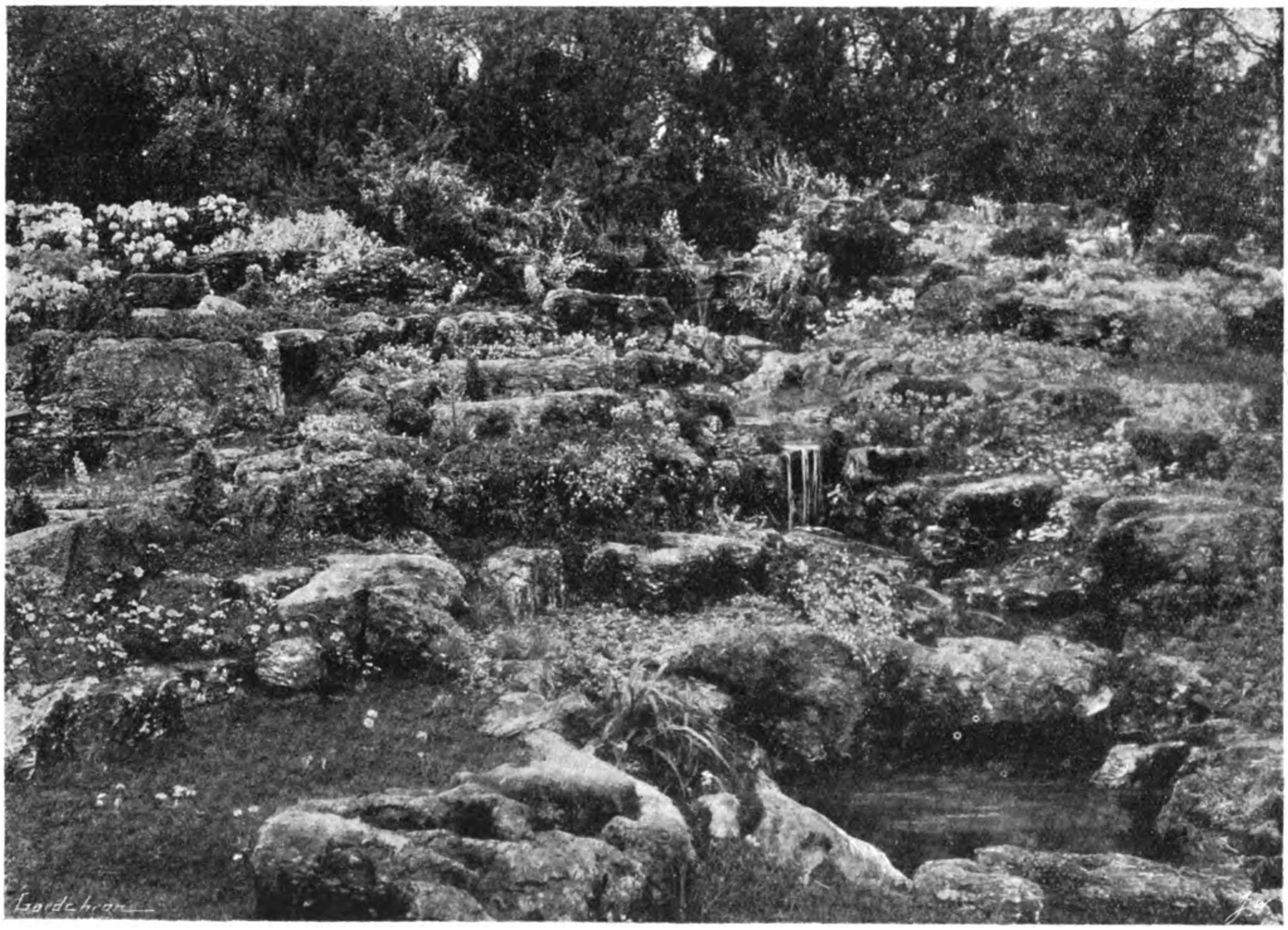

FIG. 166.—MR. G. G. WHITELEGG'S ROCK GARDEN AT CHELSEA SHOW. AWARDED THE "DAILY GRAPHIC" CUP.

The robust Fuchsia Riccartonii makes an excellent hedge plant. A feature of the gardens at Lambay Island, county Dublin, was a hedge of this variety, which was nearly two hundred feet in length, eight feet in height, and three feet in width. This hedge was cut back annually with the garden shears. Growth was most luxuriant, although the position was fully exposed to the westerly gales.

Borders composed of Fuchsias in variety are interesting, and some of the more tender sorts may be introduced for a summer display with advantage. Varieties with ornamental foliage are most useful for introducing into this scheme. Sometimes a batch may be planted in the herbaceous border.

At the end of a long border, under the partial shade of trees, a group of Fuchsias associated with grey-foliaged plants provided a very effective finish.

These Fuchsias are generally propagated from cuttings. In mild, damp localities large plants may soon be obtained by pegging down some of the young shoots into light, sandy soil. During the winter coal ashes placed over the roots form a good protection. In exposed gardens the branches will sometimes be killed by frost during severe weather, but new growth will appear with the warmer days of spring. If desired, small plants may be lifted and stored for the winter.

In addition to Fuchsia Riccartonii, already mentioned, others well-known are, F. gracilis, with slender, drooping stems and crimson flowers, also a pretty variegated form of the latter; F. globosa, globular scarlet flowers with purple corolla; F. microphylla, a strong habited plant with long, thin, crimson flowers, and F. pumila, which has a purple corolla and crimson sepals. *C. Ruse.*

THYMUS NITIDUS.

I OFTEN wonder why this Thyme is not more widely grown in gardens generally. From all points of view it is the best of the taller bush Thymes. It appears to be much more indifferent as to soil and climate than most of its nearer relations. Well able to undergo fully twenty degrees of frost without injury in any fairly free soil, and showing no resentment towards wet winters, T. nitidus is one of those ever-cheerful little bushes which continues healthy for many years, and without exhibiting symptoms of deterioration or asking any attention.

T. nitidus makes a shapely bush of a foot or more in height and perhaps twice as broad. The foliage is small, grey-green, and very fragrant.

The earliest of all the numerous Thymes to bloom, this species comes into flower towards the end of April and is soon covered with masses of soft rosy lilac blossoms of good size crowded in closely packed terminal spikes. Thus a group, or even a single plant, makes a most desirable addition to the spring rock-garden. But T. nitidus is such a hearty doer that it is well worth a place at the margin of the mixed border or shrubbery; it is admirable in bold colonies in the Heath garden—where it will do well in the poorest and hottest of soils—and it may be very delightful used as an edging or diminutive ornamental hedge. *J.*

PIPTANTHUS NEPALENSIS.

THIS handsome, evergreen shrub is a good wall plant for a south or west aspect. It is a quick grower and soon covers a space ten feet or twelve feet square. It bears a wealth of pale-yellow, Pea-shaped flowers in terminal racemes, commencing in May, which remain in beauty a considerable time. Piptanthus nepalensis thrives in a rich loam, but is not at all exacting as to soil, provided it is well drained. Propagation may be effected from cuttings of ripened wood inserted under a bell-glass, or from seeds. *W. A.*

ROMNEYA COULTERI.

THE indifferent success which many people appear to have with this fine subject is doubtless often due to the plant being allowed to develop suckers. Most old-fashioned specimens will send up these young growths from the soil, perhaps ten feet from the base of the parent, and if these are not checked deterioration is inevitable. We make a practise of pulling up all suckers so soon as they are discovered, save any that may be wanted for propagating. Regarding the latter, we usually reserve two or three of the strongest off-sets and allow them to grow until they are about two years old. These are moved into a nursery bed, or planted where they are intended to grow.

There is one other point in the culture of the Californian Bush Poppy which may be alluded to and that is the desirability of cutting the plant back to the base every spring. Doubtless one forfeits comparatively early flowers by this treatment, but I am convinced that it makes far better and stronger growths, more of them, and bigger and more numerous flowers. R. Coulteri does not seem to mind how poor the soil is, provided the latter is well drained and stony. In fact the more stony it is the better does the plant seem to thrive. *A. T. Johnson.*

NOTICES OF BOOKS.

The Fruits of France.

THIS new book* by Dr. Henri Leclerc contains thirty-seven essays of varying length, each devoted to a particular fruit. A benign humanism breathes through its pages; for although his purpose is in the main medical, his love for the beautiful, the mythological, the historical, and even the humorous, has enabled him to write a book that appeals to everyone. Written in that clear, concise style which is characteristic of the French savant, his book is valuable both as a contribution to a department of the history of medical botany, and as a résumé of the latest researches into the chemistry of fruits. Nearly every chapter includes a chemical analysis; and there is a piquancy in the way in which he sometimes passes rapidly from quotations from the old botanists to a neat little table of chemical analyses, commencing with Water and ending with Insoluble Matter! For him the history of botany is nót a detached phenomenon to be regarded as far removed from modern practice. Throughout the book we find him quoting the older botanists, from Theophrastus onwards, not only with intimate knowledge and rare restraint, but also with a sense of the essential continuity of all learning. For example, in speaking of the old medical uses of the Pomegranate, he refers to the confirmation given by Francis Buchanan in 1807, whilst in India, to the efficacy of the skin of the root as a remedy for tape worm—a remedy recommended in earlier times by Dioscorides, Pliny, Celsus, and others—Buchanan having seen it used with success by the Hindoos.

In his chapter on the Apple, after referring to its mythology and early history, he gives some eleventh century citations confirming its cultivation in Normandy for cider making. Among the curious old medical observations is the following: "La Bruyère-Champier points out the case of a secretary of Francis I., who was unable to smell an Apple without immediately being taken with an attack of bleeding at the nose"! In this chapter also, is a recipe for making Apple jelly, taken from *Le confiturier françois*, 1660. On another page is the recipe for a mixed marmalade made from Strawberries, Cherries Raspberries, and Gooseberries. Turning next to the Strawberry, we find an interesting quotation from a work dated 1600 as to the eating of wild Strawberries with cream, "after sprinkling them with sugar." This chapter ends with a charming phrase used by Bernárdin de Saint-Pierre, which may be translated, that the Strawberry plant "interlaces the ground with its branchings and benefits." Of the cooking of Chestnuts we are told that early in the sixteenth century they were cooked inside a pierced saucepan and eaten with cheese: and in 1578 the celebrated doctor Mizauld called attention to the very necessary precaution of cutting the Chestnuts with a knife before roasting them! After quoting some very pessimistic early opinions as to the merits of the Melon, this quaint anecdote is added: "Without taking these things too tragically, a practitioner of Lyons of whom Simon Paulli speaks (in a work published in 1666) recognised in the Melon a redoubtable auxiliary to the Fates: having amassed a large fortune in the exercise of his profession he built a mansion which bore over its front door the following distich:—

> Les Concombres et les Melons
> M'ont fait bastir cette maison."

Of the Orange we read, that Ninon de Lenclos (1615-1706) attributed her prolonged youthfulness to her habit of eating a dozen a day.

In a book dealing primarily with the therapeutic properties of fruits, we do not expect to find any very full treatment of the origin of cultivated fruits. There are, however, several interesting references to this subject, as for example, that the Black Currant "grows wild in France, in the woods and valleys of Auvergne, Mont Cenis, Piedmont, Switzerland, Sweden, Germany, and Siberia." Used medicinally before its adoption as a table-fruit, "its use had only become common in 1712, following a pamphlet by the Abbé P. Bailly de Montaran dedicated to its admirable properties." (The edition cited in the footnote is dated 1749). Upon the Red Currant also he has something to say, in contradiction to a generally accepted opinion that it was introduced into France by the Danes and Normans: "But to that one may object that it grows wild in nearly the whole of Great Britain and in Normandy, and that the name it bears in Brittany implies an earlier culture than that of the Normans in the West of France; the Bretons, in fact, call the Currants *Kastiles*, word derived from *gardiz*, which means in their language rude, harsh, sour (*rude, âpre, aigre*)."

There are several very interesting references to the botany of the classical poets, notably in the case of the Beech as mentioned by Virgil. In his chapter on "La Faine" (Mast or Beech-nut), Dr. Leclerc introduces the subject by referring to the great love for Beech-trees expressed by his friend, Professor Edon, who, he says, although the most conciliatory and gentle of humanists, can scarcely restrain his wrath against certain commentators of Virgil who consider that by the word *fagus* the poet was referring, not to the Beech, but to either the Oak or the Chestnut. He adds: "It is not, however, without reason that he has accused them of being dim-sighted; the arguments seem decisive which enable us to recognise the Beech in the *fagus* of the Romans; without speaking of the epithets which Virgil has given it, and which agree with its tall stature (*alta*) with the development of its branches (*patula*), with the bushy appearance of its foliage (*densa*), which do not allow the rays of the sun to penetrate (*umbrosa*), we have Pliny's testimony, which shows us its fruit resembling a stone, and contained in a triangular envelope, *fagi glans nuclei similis, triangula cute includitur*." (Pliny, *Hist. nat.*, lib. XVI. cap. VI.)

Dr. Leclerc has a happy way of describing in a few words the beauties of the various fruits; but these descriptions must be read in the original French to appreciate their merits. There is a good index, to which our kindly author places a footnote, that he "owes it to the affectionate collaboration of my learned friend, Dr. Robert Van der Elst." The book is without illustrations, unless the boldly drawn head-pieces to the chapters, representing fruits in an appropriately decorative way, may be considered as such. *S. Savage.*

APPLE LEAF SCORCH.

NUMEROUS analyses and estimates have been made of Apple tree requirements based on removal data, especially perhaps in France, for instance an adult tree producing 8K. of wood, 15K. of leaves, and 100K. of fruit has been estimated to remove and require 20g. nitrogen, 5g. phosphoric acid, 20g. potash, and 40g. of lime: contrast this with the Long Ashton proportions (used on growing trees, however)—nitrogen 1.1, phosphoric acid 0.5, potash 0.67, lime (as CaO) 0.41. It is commonly understood that normally, potash is absorbed in the form of carbonate or perhaps some organic combination; what chance have these pot trees to get their potash or indeed other constituents in normal form? And this leads to an emphasis on the absence of controls in the trials. It is almost axiomatic in experimental research that the validity of a result depends upon the validity of the blank or control trials; and we have no account of any controls, one looks in vain for the presence of carbonates, of humic matters, or to mention but one other item, of zeolith complexes in parallel trials, wherein perchance the osmotic mechanisms of the roots would not be exposed to such strange conditions, as when confronted with the "nutrient solutions" that were employed.

I have now succeeded in seeing the 1923 Report, and find that what is called a nitrogen-potash ratio is now in vogue; by this apparently a nitrate-nitrogen-potash ratio is meant, as no other form of nitrogen appears in the trials. If *Market Grower* or others have total nitrogen estimates made on their soils and reckon all as nitrates, they would well bie them nimbly to peg out claims for planting, hard by to Stassfurt! A prominent item in this report is the addition of sodium silicate, the nature of which—for there are silicates and silicates and still more mixtures of silicates—and its chemical effect on the components of the nutrient solution are treated with silence. Perhaps the idea was to add the ubiquitous element, silicon, to the pabulum, but no analytical data are given to show successful absorption.

It is gratifying to find Mr. Wallace (*Gard. Chron.*, April 18, p. 273), supporting my contention that the data I quoted from his papers support the view that the simple potash supposition has no clear issue. Thus he reverberates the combination of absence of leave scorch with absence of potash in the rain-water fed trees, and rain water should not contain more potash than all the blood of existing dodos, though it might well have traces of nitrogenous compounds. He reiterates the uncertainty of the varied results of the magnesia proposition. He agrees with me, when I contend that with the nutrient solutions, the apparent potash protection "only points to some sheltering effect against the untoward action of the other or of some of the other salts in the solution"; in other words he ousts the simple potash notion. Yet, on this evidence I heard a friend advised to expend considerable sums on potash manuring on a soil rich in total potash—I think that one of our great soil experts says somewhere that the business of the expert is to make locked up treasures available to the farmer rather than needlessly adding to what is already there.

My reference to Dr. Dyer's work was taken from a rough note on available potash, and having erroneously in mind that it was a general all-round limit I carelessly only confirmed the source and not the substance; Mr. Wallace very properly remarks that the figure was for Barley. But so far as concerns percentages for Apple soils, it is of little moment, for (Long Ashton *Report*, 1921, p. 92), the scorch centres A and F (0.0181 and 0.0133) contrast with the non-scorch centre H (0.0129). It may be disappointing that

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* *Les Fruits de France, historique, diététique et thérapeutique.* Par Henri Leclerc. (Masson et Cie., Editeurs, Paris, 1925). pp. 274. Fr. 12.

his mere statement that leaf scorch at A and F has "practically disappeared"—not entirely be it noted—since potash dressings have been given, seems to me to be of slight scientific interest in the absence of data as to what controls there were, whether the available potash was observationally raised thereby, and, in view of his later idea, what were the nitrogen or rather nitrate-nitrogen-potash ratios on the control and on the treated patches.

His last sentence, "As, however, leaf scorch in the field can result from other causes than the above, it is not to be expected that potash dressings will be effective in all cases," shows that the true prime cause is yet to be disclosed, if leaf scorch be a morbid entity. Whilst the proving of its essence lies with the pathologist, its recognition with the "clinician," it is the aim of the etiologist to show what the sole prime cause may be, otherwise he has to seek shelter by the *deus ex machinâ* of mere symptoms, or worse, of symptoms without specific value—the apparent *status præsens*. Mr. Brown (*Gard. Chron.*, April 25, p. 288) does not state the nature and age of the manure he used. The Long Ashton rain-water and sand trees suggest starvation, both of trees and of possibly bacteria, etc., present in the pots, and leaf scorch was largely absent. I sympathise with *W. T.* in his ponderings over the soil changes which may have occurred in recent years, but, I hardly think that I have done more than to make a few inferences; when records of carefully designed and executed experiments and comparative estimations are available on trees on known stocks (*vide* 1921 *Rep.*, p. 46), it will be time enough to come to the making of conclusions. *H. E. Durham.*

THE more closely one studies this problem the more perplexing it appears to become. Mr. Brown's notes on page 288 are full of interest, but they do not carry us much nearer to an acceptable solution. I have had die-back on badly scorched trees, but until reading the remarks alluded to above had not intimately connected the two troubles; the feasibility of the theory is, however, perfectly tenable and I shall watch with clearer eyes in future.

In my own experience neither the absence of food nor the presence of ample supplies of organic nutriment can be ascribed as the primary cause. Bush Apples on impoverished land badly afflicted with leaf scorch have responded to feeding in some instances and remained absolutely unchanged in other cases of the same variety in the same drift. I incline to the view that one of the causes is defective root-action, and that impaired power of proper food assimilation by the leaves is another cause, but have failed to find anything tangible in support of either assumption.

The trouble is a serious one for the private gardener and immeasurably more so to the commercial Apple grower, and the desirability of ascertaining the true cause cannot be doubted. I agree most heartily with Mr. Brown when he states, "If the many gardeners who must have experienced it would only relate all they could tell about it much valuable information would result." *W. T.*

WOODLAND GARDEN.

OXALIS OREGANA.

AFTER a few unsuccessful trials we have managed to get this very desirable Oxalis well established in our woodland garden. I do not think we can yet claim to have succeeded in inducing it to naturalise by seeding, as O. Acetosella rosea has done so willingly, but it is spreading into promising colonies.

Though much like O. A. rosea in the bloom, O. oregana—a N. American species—is considerably larger in all its parts, whilst the colour of the flowers is a vivid, full-toned rose-pink.

The tri-foliate leaves are of the same delightfully cool green as those of our own native species, but rounder and ampler. It is curious to note that these leaves do not appear to be so sensitive as those of the Wood Sorrel, it being no uncommon experience to find them fully expanded whilst those of the indigenous species are folded in "sleep."

VIOLA CANADENSIS.

GROWING in a cool spot in the woodland along with some dwarf Ericaceous shrubs, this N. American Violet has been a singularly attractive object throughout the spring. It is, as most readers are aware, a plant of considerable variation in regard to the colour of its flowers, the particular form referred to here being a pure Snowdrop white, with a few very distinct central rays and a slight shade of purple on the reverse when the flowers are mature. But these blossoms are not only conspicuous by reason of their unusual whiteness; they are of a peculiarly firm texture and very large and broad, opening flat to close upon one inch from side to side.

V. canadensis bears its flowers on leafy, branching, more or less upright stems, often over a foot in length, and the fresh, sappy green of the sharply-serrated leaves affords a pleasing background for the blooms. *J. N., Wales.*

BOG GARDEN.

THE BOG PIMPERNEL.

THIS is one of the choicest of our native plants, a tiny creeping herb pressing its slender branches, set with their pairs of rounded, glossy leaves, against the soil, or weaving them through any lowly herbage with which they may be growing. In early summer these become studded with numerous little flesh-pink cups of singular daintiness, a succession of flowers being maintained nearly all the season.

Farrer truly states that there could be nothing more lovely than a grouping consisting of the Bog Pimpernel (Anagallis tenella) and that other charming native, Campanula (Wahlenbergia) hederacea. I would suggest, in addition to this, that the Marsh Violet (V. palustris) with its delicate lavender-blue flowers, makes an equally delightful companion for the Pimpernel.

In the garden the Bog Pimpernel is not a difficult subject. It likes moisture and grows especially well in a moist, warm soil such as the Droseras and Pinguiculas enjoy, and in full exposure; where there is any doubt as to the moisture supply some shade would probably be advisable. In nature it may be found flourishing under a wide variety of conditions, but I have never seen it in such great abundance as in the shallow, damp turf overlying the limestone of Anglesey cliffs. *N.*

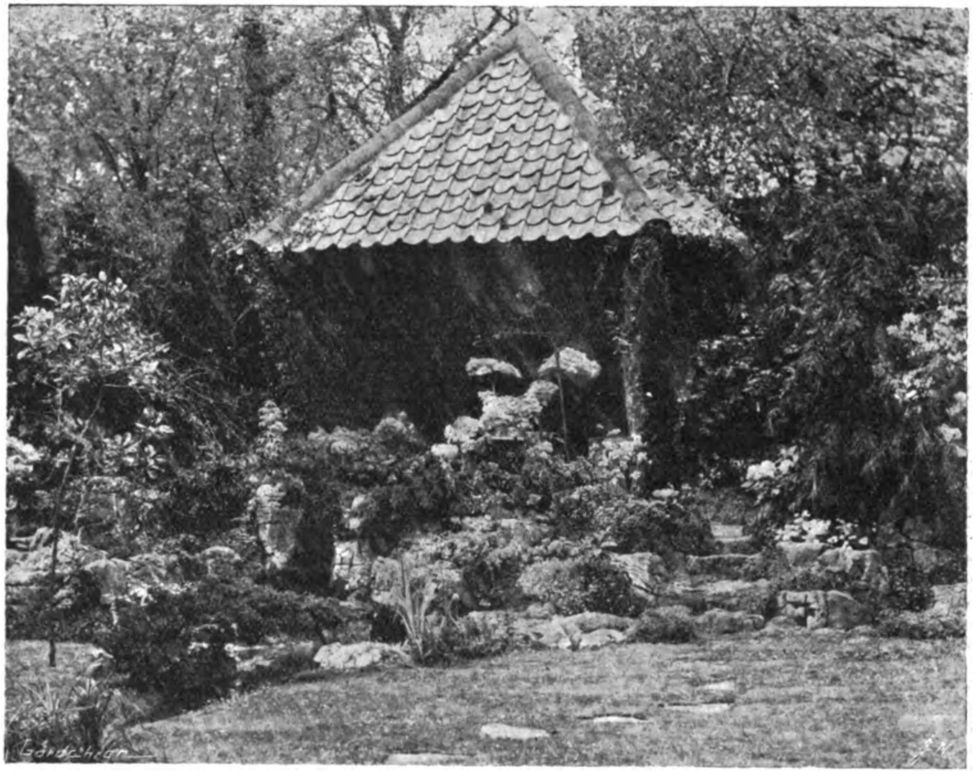


FIG. 167.—MESSRS. W. H. GAZE AND SONS' TEA HOUSE AND ROCK GARDEN AT CHELSEA SHOW (see p. 379).

PUBLIC PARKS AND GARDENS.

THE Halifax Corporation Parks Committee has agreed to construct an additional bowling green in Shroggs Park.

THE Ministry of Health has sanctioned a loan of £1,226 for the provision of a bowling green at Tivoli Park, Margate.

HAMPTON URBAN DISTRICT COUNCIL has decided to purchase eleven-and-a-half acres of land in Wensleydale Road for a public recreation ground.

THE attention of Glasgow Corporation Park's Committee having been called to the large number of hearses and mourning coaches which have been passing along the main drive of Glasgow Green for some time past, Mr. Matthews, Superintendent of Parks, was instructed to direct the notice of undertakers in the city to No. 5 of the parks bye-laws, which provides that "no person shall take into the parks any hearse or mourning coach."

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C. 2.

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

THE GARDEN IN ANTIQUITY.

VI.—OLD EGYPTIAN VINE-CULTURE.

HOW easily we may be misled by unguarded or inaccurate statements respecting the garden-craft of ancient times appears from the following.

A report came from Assuan, dated March 10, 1925, to the effect that a church dating from the 8th cent. A.D. had been discovered. "The baptistry of the Church was found complete. Other parts unearthed include the defence towns, the monks' quarters, and secondary buildings such as the brick kiln, the wine press, an apparatus for grinding corn, &c. The discovery of the wine press is interesting, as it has hitherto been thought that Egypt did not produce wine. Petrified Grapes were found in the press."—*Reuter*. So runs the report. What exactly is meant by "petrified Grapes" one would greatly like to know. But whence came the idea that Egypt did not produce wine? We may perhaps trace it, in the first place, if it really existed among the well-informed, to a statement made by Herodotus. "The Egyptians who inhabit those parts of Egypt which are sowed with corn, are (he states), of all nations I ever saw, the greatest reasoners about the monuments of antiquity and actions of mankind. Their manner of life is this . . . They make their bread of olyra [probably the *doora* of modern Egypt] and call it by the name of Collestis; but their wine is made of Barley, because they have no vines in that country." It is clear from this, some might say, that in the time of Herodotus the vine was unknown in Egypt. To which it may be replied, in the first place, that this is not necessarily the inference to be drawn from the phrase "in that country;" and in the second place, that if such were the only conclusion to be reached, Herodotus must be at fault. But that Herodotus was not at fault may be proved by his statements elsewhere, and by the fact that his references to Egyptian wine made from the vine are to be verified in many ways. If we turn back a few pages (*Euterpe*, ch. lx.) we shall find it stated that, when the worshippers arrive at Bubastis, "they celebrate the festival with numerous sacrifices, and consume more wine (of Grapes) than in all the rest of the year." Most emphatic, also, is the statement (*Euterpe*, ch. 37) respecting the priests. "They enjoy great advantages, for they are never disturbed with domestic cares and expenses. They eat the consecrated bread and . . . have an allowance of wine." In each of these quotations the word for the vine (*ampelos*) occurs, or vinous wine (*vinos ampelinos*) is specified by way of emphasis, to distinguish it from Palm wine or the beverage made from Barley. Thus Dr. Turner in his *Notes on Herodotus* remarks that *ampelinos* is added for distinction; the expression "they have no vines in that country" being "an assertion which doubtless applied only to that part of Egypt marked out for the cultivation of corn. For though the juice of the Grape came far more into use after the reign of Psammetichus, yet it is evident that the ancient Egyptians were neither unacquainted with the vine, nor with wine made from it."

It is, however, necessary to go into the proofs of this assertion, and it may be affirmed at the outset that the evidence in favour of the vine being known in ancient Egypt is overwhelming, whether we take the statements of the classical authors of Greece and Rome, the testimony of Scripture, the allusions to be found to it in Egyptian records, or the inferences to be drawn from old-time usages and customs. Let us begin with evidence which is familiar to all. In the Book of Exodus we read that "the butler of the King of Egypt and his baker offended their lord the King of Egypt. And Pharoah was wroth against the chief of the butlers and against the chief of the bakers." So he put them in prison, where the butler had a dream, which he told to Joseph. "In my dream, behold, a vine was before me; and in the vine were three branches; and it was as though it budded, and its blossoms shot forth; and the clusters thereof brought forth ripe Grapes; and Pharoah's cup was in my hand; and I took the Grapes and pressed them into Pharoah's cup, and I gave the cup into Pharoah's hand." It is surely astounding, in the light of this statement, to read that "it has hitherto been thought that Egypt did not produce wine." What is the meaning of the words used by the Congregation of Israel in their murmurings against Moses and Aaron? "Wherefore have ye made us to come up out of Egypt to bring us into this evil place? It is no place of seed, or of vines, or of Pomegranates," (Numb. XX., 5). Surely any allusion to these plants would be meaningless if the people had not been familiar with them in the land of their captivity. Equally unlikely is it that the Psalmist would say: "Thou broughtest a vine out of Egypt" (Psalm LXXX., 8), if it were known that the vine was alien to that country.

When we turn to the Greek and Latin authors we find that the Classics abound in allusions either to the vine of Egypt or to the presence of the vine and its fruit there. If we revert to Herodotus we find him alluding to the cities of Apis and Marea (*Euterpe*, ch. 18, 5, and ch. 30., 10), on the frontier next to the borders of Libya. Now the mention of Marea at once recalls the words of Horace:—

> *Nunc est bibendum* . . .
> *Mentemque lymphatam Mareotica, etc.*,
> *Carm.* i. 37.

The commentators inform us that Mareotic wine was from the shores of Lake Mareotis in the neighbourhood of Alexandria. Much learned ink has been spilled over the question of the geography of Herodotus, but the facts are sufficiently clear. He is on the whole a trustworthy writer, and both his geography and his natural history show first-hand knowledge. Marea and Mareota are given by the authorities as a lake and city of Lower Egypt, where the vine flourished and a famous wine was produced. The region where the city stood is to-day known as Mariuth, but is well-nigh a desert.

If now we turn to Virgil we find him enumerating the different kinds of Grape vines in the following lines:—

> "One kind of cluster hangs upon our trees,
> Another dangles from Methymna's vine,
> Thasians there are and Mareotid whites,
> (Rich soils prefer the second, light the first),
> Psithian for raisin wine, and dry Lagene."
> *Georgics* ii, 105-110.

So the words are rendered by Royds in the Everyman Edition of the *Eclogues and Georgics* (p. 95)

In the worship of the goddess named Isis (says Herodotus, *Euterpe*, ch. xl.) they sacrifice a bullock, filling the body with fine bread, honey, dried Raisins, Figs, incense, myrrh, and other perfumes. True, some of the ingredients may have been imported, but there is every reason to believe that the Raisins or dried Grapes were home grown.

In his *Outlines of a New Commentary on Solomon's Song* (p. 140), Harmer refers to vine arbours as being common in the Egyptian gardens. In further confirmation reference may be made to two Greek writers of nineteen centuries ago, Strabo and Diodorus Siculus (ch. i., 36). Herodotus, moreover, identifies the Egyptian deity named Osiris with Bacchus, who was known as the inventor of wine.

This error respecting the vine has been often repeated. Reland, who wrote a learned work on the Holy Land, says (*Palaest. Illust.*, i., p. 381) that the vine did not grow in Egypt, on which account they drank a kind of beer, made of Barley and called zytho. In support of this he quotes the words of Herodotus already given above:—"Their wine is made of Barley because they have no vines in that country" (*Euterpe*, ch. 77, 15). The mistake has been handed on by recent authors in a manner which is very tantalizing. "When we take into account (says one writer) that the vine was not cultivated in Egypt, and that the inhabitants were obliged to use a drink compounded of water and Barley, similar to our small beer, it is not improbable that the produce of the vines which grew on the hills of Ephraim was likewise carried to the banks of the Nile." The word *zytho*, which Reland uses in the passage to which I have alluded, has proved a bug-bear to the lexicographers. I examined some fifty dictionaries and works of reference in order to see what explanation or derivation might be suggested. One English lexicon gives, as its very last word, "ZYTHURN, zi'*th*urn, *n.* A beverage made from malt and wheat." Here it is very evident that the word was incorrectly spelt, since another gave "ZYTHUM, an ancient beverage made of malt and wheat." This is the equivalent of "*CEREVISIA, humor ex hordes aut frumento in quandam similitudinem vini corruptus*," and is in reality a Greek word *Zythos*, closely related to the Latin word *jus*, and our English *juice*.

Dr. Budge, whose authority is indisputable informs us that in Ancient Egypt there were in connection with the residences of the rich and the palaces of the Kings, gardens and groves, with arbours covered with creepers and vines which the gardeners watered daily by means of small channels into which the water was directed, either by the shaduf or the water wheel. Near by were the wine-press, beer-house, stables, and other buildings for cattle, grain, fruits, vegetables, and other necessaries of life. Indeed, it is possible to trace back the making of wine in Egypt, and the cultivation of the vine, not less than five to six thousand years. Evidence is found in the tomb of Ptah-hetep, who lived at Memphis some 3,000 to 4,000 B.C. It is no doubt true to say that the common people drank either beer, made from Barley and flavoured with different kinds of plants in the place of Hops, a sweet beer or mead made of honey, or Date wine; but wine made from Grapes was certainly the principal drink of royalty and the upper classes, and this was often taken in the unfermented state as the pure juice of native fruit.

Enough has been said I think, to show that the vine was grown in Egypt in very ancient times, wine being made from the Grapes and drunk in its fresh state or after fermentation; and that the repeated statements to the contrary are due to the careless repetition of unverified statements based on a misconception of the meaning of a passage in Herodotus.

We shall now be in a position to take up the study of garden-craft in Egypt in its wider and more popular aspects. *Hilderic Friend.*

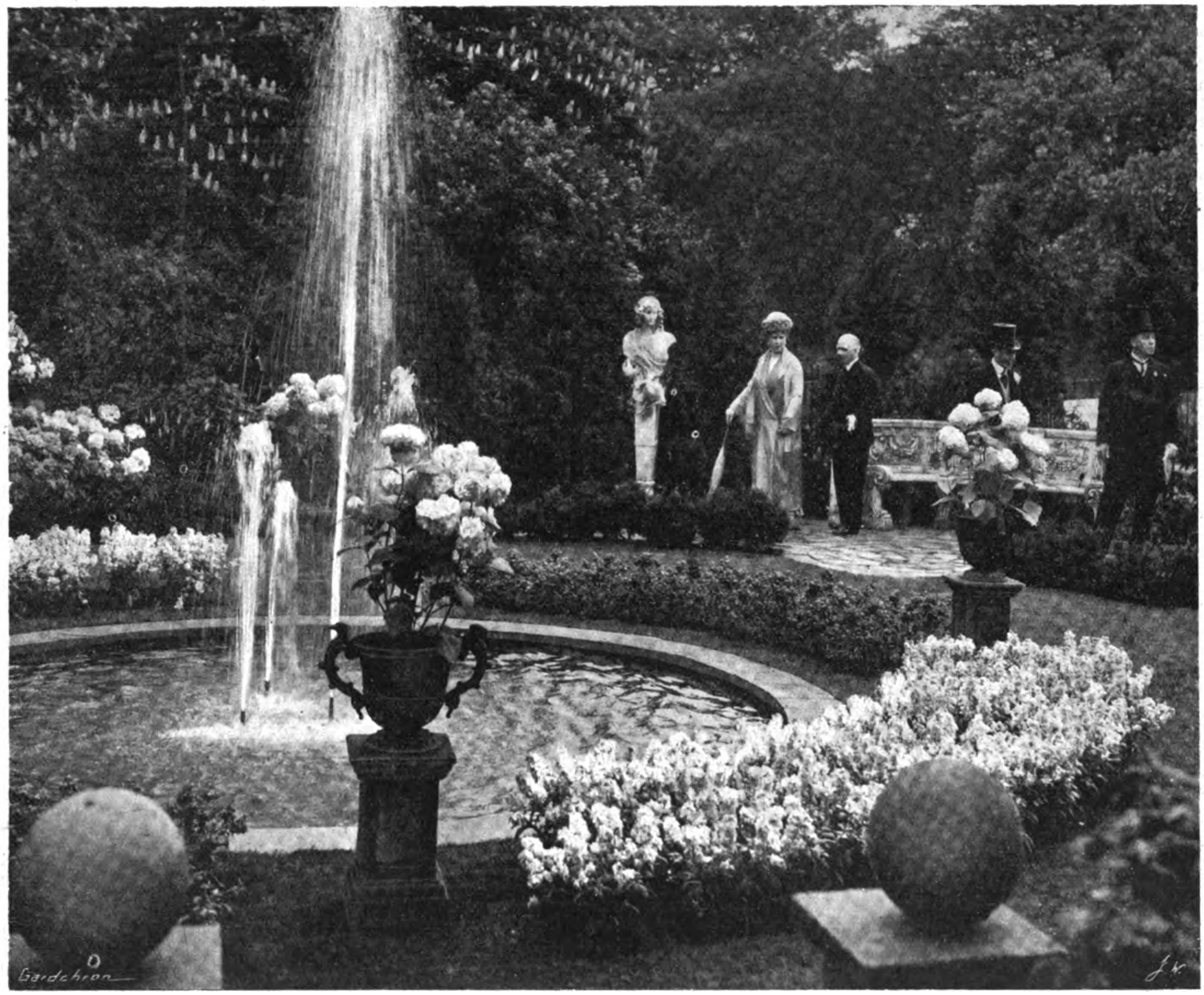


FIG. 168. THEIR MAJESTIES KING GEORGE AND QUEEN MARY IN MESSRS. JAS. CARTER AND CO.'S FORMAL GARDEN AT THE CHELSEA SHOW (see page 379).

CONCERNING SLUGS.

SOME years ago (*Gard. Chron.*, July 24, *et seq* 1920), methods of dealing with slugs were described, including a simple and cheap form of trap which I called the "any pot trap" from the simplicity with which it could be made. Some further results of its use may be of interest. Last autumn, it became clear that, although considerable numbers of slugs were taken, many more were located around existing plants and failed to be decoyed away from them. Hence, the idea was evolved of "slug-driving," that is, making their location unhealthy, and so sending them wandering towards the traps.

Unfortunately, no useful data seem to be available on the effect of many possible fumigants upon existing plants. It may be said that it is very difficult to be certain whether substances tried have a real effect since the bag obtained, with and without "aiding" substances, varies considerably. The first attempt was made on a walled border, from which, though considerable numbers of slugs had been taken, yet still they came; the back two-thirds was sprayed with a winter-strength, lime-sulphur solution, the traps being along the front of the border; the result was a quadrupled bag, suggesting that many had been made to "walk," however, further trapping showed that still there were large numbers remaining.

Then, as a driving agent, pieces of ammonium carbonate of the size of Walnuts were dibbled in towards the back of the same border (about six-inches deep and two-yards apart). Though there was an increased bag, on another border partly thus treated and partly for control, at one observation the control part gave a very much higher yield. The weather was very wet, and it is unlikely that there was any satisfactory vaporising and spread of the agent.

Fairly continuous records were kept on one border, fourteen-yards by five-feet, with thirteen traps. This border had been trapped for some time, but on December 2 pieces of ammonium carbonate were dibbled in every one-and-a-half-yard towards the back of the border, at intervals the slugs were spooned out into a half-pint measure, and the following fractions give the extent to which this was filled:—February 3, three-fourths; February 5, one-half; February 7, one-fourth; February 11, three-fourths; February 19, full; February 22, three-fourths; total, two pints (four half-pints).

Later, the traps were again baited and the catch in fractions of a pint were recorded:—February 2, two-thirds; February 5, two-thirds. Powdered napthalene was then scattered about the back of the border. On February 15 the catch was two-thirds; and on February 21, one-fifth pint. A proprietary powder, vaunted as a slug-agent, was then dusted about to see if any further effect would be shown; on

February 27, one-fourth; on March 8, one-third; and on March 15 very few slugs were trapped. It was then thought safe to plant out young Cabbages, and these have been unattacked. At the end of April three traps were put on the same border at a likely spot, but by May 3 only about half-a-dozen slugs had been taken. The total bag on this border has been over three-pints; statistically, as I have one-hundred-and-fifty of these traps about the garden, we should have taken quite a gallon of slugs altogether at the same rate. Whilst not a single individual of August-sown Onions survived slug attack, we now have Carrots, Peas, etc., appearing without apparent loss.

Traps which kill and work whilst one is not there, provided they be baited when needful, seem to me far preferable to methods requiring personal presence for their efficiency. Still, some method of driving without damage or risk to growing crops would be an additional help, could some suitable agent be brought forward?

A good test of the slug population, for safe planting, is to prick out a few young Lettuces with three or four leaves; if these survive untouched for a few days, the area may be considered safe. *H. E. Durham.*

ALUM AS A SLUG AND SNAIL DESTROYER.

In *The Gardeners' Chronicle* of January 3, 1925 (Vol. LXXVII., p. 14), I drew attention to the use of alum as a slug and snail destroyer. At that time, although I had used the material, both in the dry state and in solution, with success for this purpose for several years, I had made no systematic experiment to ascertain the maximum strength at which the solution could be used for watering and spraying plants without causing injury to them, and as I have recently done so, I now give the results.

For the tests I selected two plants—a shrubby Veronica and a cultivated Strawberry. The Veronica, a rather soft-wooded, un-named hybrid, really consisted of four distinct plants, which had been struck from cuttings two or three years ago in a three-inch pot, in which they had been allowed to remain unattended for that time, and, of course, the roots had found their way through the hole in the pot into the soil beneath, in which they had formed a mass several times larger than the very compact mass within the pot itself. A severance of the roots was made at the base of the pot, so that the plants, which were about twelve inches high, and had grown into a clump, were severely handicapped from the start. The Strawberry (Garibaldi) was a healthy young plant, from a runner that had been pegged down in a three-inch pot last season, and its roots were also pot-bound.

I started with a saturated solution of the alum, which is one in ten (approximately one pound to one gallon of water) at ordinary outdoor temperatures, and the plants, which were placed side by side in the open air, were thoroughly watered and sprayed overhead daily with it for a fortnight, no other fluid being supplied to them except the negligible amount they received from a passing shower of rain occasionally. After this ordeal, an examination showed that there was no trace whatever of damage to the plants, although, owing to the severance of the larger part of their feeding roots, there was a certain amount of flagging of the foliage in the case of the Veronica, which, of course, was inevitable in any case, and from which they gradually recovered. But in the case of the Strawberry, not only was there no visible injury to the plant, but it continued to put forth its young leaves as actively as several others of the same kind which were not so treated.

As a result of this experiment, I am quite convinced that outdoor plants generally may be repeatedly watered or sprayed with a saturated solution of alum without risk of injury to them, and that therefore a solution of this strength may be safely applied to growing crops for the purpose of destroying slugs and snails, for which it is the most effective material of which I have had any experience. I have never yet seen a slug or snail escape which had come into contact either with the dry material or a solution of it, even considerably below saturation point; but a saturated solution seems to be more lethal than even the dry powder, probably because in the fluid state it acts more speedily than as a solid, and if the liquid application is thorough, a second one is unnecessary. The solution is, however, as I mentioned in my former communication, much more effective if it is used as hot as possible when such things as rubbish heaps and other harbours of the pests, where no plants are involved, are being treated, as the vapour finds its way into all the interstices, and destroys eggs which the fluid could not, perhaps, in every case reach.

An alum solution is extremely simple to use, all that is necessary being to dissolve the material in a suitable vessel by means of hot water, and make certain that a little of it always remains undissolved at ordinary temperatures, thus ensuring that the solution is saturated. For solutions, lump alum, which is cheaper, may be used instead of the powdered material. As it contains no grit or other matter which would choke the nozzles of sprayers, and is thus much less troublesome than the sulphate of aluminium and lime solution, which must be strained before use, alum solution is ideal so far as easy application goes, and sprayers may be easily cleaned if necessary after use by having some water forced through them.

Stomach poisons are of little value in the case of slugs and snails, as they usually avoid them, and spraying plants with any substance which renders the parts unpalatable to them is merely a preventive measure. What is wanted is a lethal substance which will reach them in their haunts and destroy them by contact. In a saturated solution of alum we have such a substance, and, whether hot or cold, it will at once destroy every adult and egg with which it comes into contact. Purchased in quantity, the unground material is not expensive, and where the infestation is severe its use will soon repay the small outlay on material in crops saved from destruction. It has also the merit of being non-poisonous, and may therefore be used with safety on edible plants of any kind.

Powdered alum is, of course, excellent as a preventive, but in order to destroy the pests it requires to be scattered over the ground when they are feeding. I find, however, that, besides being more lethal, it is even more effective as a preventive when used in solution, as, if it is sprayed over surfaces, when the moisture evaporates a layer of very fine alum crystals is left, and the distribution of the material is therefore much more uniform than it could possibly be when sprinkled over them in the dry state. But if the solution has done its work thoroughly, there should be few adults to ward off afterwards. *A. D. Richardson, Edinburgh.*

ORCHID NOTES AND GLEANINGS.

ODONTIODA REDSTART.

A large and finely formed flower of this showy Odontioda, raised by Messrs. Sanders, St. Albans, between Oda. Brewii (Oda. Charlesworthii × Odm. Harryanum) and Odm. percultum (ardentissimum × Rolfeae) shows it to be one of the finest of the wholly deep ruby-crimson section.

The flower is of firm substance with strong features of Oda. Charlesworthii, and, through it and the other parents, has derived the prominent yellow crest of Odm. Harryanum at the base of the lip, which is broad and flatly displayed. There are now about five hundred Odontiodas with various degrees of Odontoglossum in their composition, but in a large proportion the scarlet colour derived from Cochlioda Noezliana remains, brightened and intensified, and is equally potent when carried on by crossing in other genera.

ORCHIDS AT EDINBURGH BOTANIC GARDEN.

The display of Orchids in the Edinburgh Botanic Garden has been very interesting this spring and one of the most notable features was an attractive group of Dendrobiums, of which D. nobile Sir F. W. Moore and D. n. Sanderianum were outstanding examples, while D. densiflorum and D. atro-violaceum are two excellent species also in flower. There is a fine plant of Cymbidium Lowianum and another of C. pendulum.

Of old cultivated species, Bifrenaria Harrisonae is in flower, and also three large spikes of Bulbophyllum barbigerum may be seen. Two or three Masdevallias are noteworthy. M. coccinea superba and M. ignea may be commended for their colour, the former being of a rich purple, the latter having orange flowers. The hybrid M. Pourbaixii is shown as a plant carrying between seventy and seventy-five blossoms. A sweetly-scented Orchid is to be noted in Polystachya lutescens, while other notable plants are Angraecum sesquipedale, Phalaenopsis Stuartiana, from the Philippines; Coelogyne ocellata, C. lentiginosa, Lycaste Skinneri alba, Epidendrum sceptum and Gongora atro-purpurea. *R. H. Jeffers.*

NEW HYBRID ORCHIDS.

(*Continued from April* 25, *p.* 286.)

Name.	Parentage.	Exhibitor.
Cypripedium Herald	Mrs. Carey Batten × Lord Wolmer	Mrs. Bruce and Miss Wrigley.
Cypripedium Queen Helen	Queen of the Belgians × Helen Walker	Mrs. Bruce and Miss Wrigley.
Cypripedium Villius	villosum × vilexul	Mrs. Bruce and Miss Wrigley.
Cypripedium O.O. Wrigley	Curtisii × Gowerianum	Mrs. Bruce and Miss Wrigley.
Dendrobium Diana	Dulce × aureum	Edinburgh Botanic Garden.
Dendrobium edinense	crassinode × Regium	Edinburgh Botanic Garden.
Miltonia Lucia	vexillaria × Princess Margaret	Charlesworth & Co.
Odontioda Bruin	Oda. Brewii × Odm. His Majesty	R. Gerrish, Esq.
Odontioda Male	Oda. Bradshawiae × Oda. Othello	Sir J. Colman.
Odontioda Redstart	Oda. Brewii × Odm. percultum	Sanders.
Odontoglossum Cramore	St. James × Mars	Dr. Craven Moore.
Odontonia Etna	M. Charlesworthii × Odm. Ithone	Charlesworth & Co.
Odontonia Laguna	Odontonia Dora × Odm. Crethus	Charlesworth & Co.
Odontonia Sappho	M. Charlesworthii × Odm. Aphrodite	Charlesworth & Co.
Sophro-Cattleya Saxiflora	S. C. Saxa × S. grandiflora	H. Dixon.
Vuylstekeara Melba	Vuylstekeara Brewii × Odm. Gorizia	Charlesworth & Co.

LA MORTOLA.

By the courtesy of Commendatore, Cecil Hanbury, the writer had the pleasure of visiting the above famous gardens, three miles from Mentone, on April 9, 1925, under the guidance of the Superintendent, Mr. S. W. McLeod Braggins, an old Kewite, who was formerly in the employ of Messrs. James Veitch and Sons.

The approach is from the main coast road by the side of a deep declivity, and the gardens have been made on the steep slope from the road, extending to the sea, with terraces and zig-zag paths. The entrance gate is surrounded by a handsome portico built of stone, and from this point a beautiful vista is obtained, looking over the trees in the valley to the sea beyond.

Various flights of steps, passing groups of succulent plants, brings one to a long terrace, entirely covered with climbers, including Clematis Armandii, which was in bloom; Hardenbergia Comptoniana, Bignonia australis, Cobaea scandens, Plumbago capensis, Tecoma capensis and a promise of a future display of Wistaria and Rose Fortune's Yellow. Deep blue Cineraria stellata, Freesias, yellow and white; Hyacinths, blue and pink; Nemesias, Primula kewensis, Fuchsia triphylla, Clivias, Dimorphotheca and Nemophila were growing underneath.

On either side of the central walk down the hill there are Palms and sub-tropical plants, whilst to the right of a curved flight of steps a beautiful grass slope is irregularly planted with Tulips, leading on to masses of rich blue Cinerarias backed with orange-scarlet Streptosolon Jamesonii and bordered with yellow Polyanthuses. I was informed that the grass seed had only been sown one month and that lawns are made anew, preferably in September, each year, when the following October rain will help to get the grass established before the cold nights of December and January check it; the heat of summer destroys the best grasses.

From a terrace on a lower level one obtains a lovely view down a central walk bordered with French Lavender, and thickly planted with Echiums, Ageratum, Statice, Roses, Iris, Acacias, Artemesia and Salvias, and flanked by noble specimens of Eucalyptus, Metrosideros, Melaleucas and other Australian trees. Grand specimens of Cupressus sempervirens pyramidalis are seen along the avenue.

Halfway down the hillside is a water garden and grotto flanked with Phyllostachys aurea, a special feature being some large groups of Cyperus Papyrus surrounding a fine bronze dragon, relieved with a bold arrangement of Arum Lilies and Caltha polypetala.

The layout of the garden is natural, while recent alterations have been made to open up distant views and at the bottom of the garden there is a magnificent collection of Citruses, including Oranges, Lemons, Limes and Grape Fruits; perhaps the most effective for display are Citrus Medica lumia dulcis, large, deep orange-coloured; C. M. Limone verrucoso, bright yellow, very warty and large; C. M. Peretonne frutto grosso, lemon yellow, fruits of enormous size; C. M. Limone di gerusalemone, large wrinkled fruits; C. M. Cedro Buddha's Fingers, fruits with outgrowths like fingers; C. M. decumana pampelmous dolce, lemon-yellow, very large; and C. M. decumana acidocco, Grape Fruit, hanging in clusters of from three to eight.

Although I was rather too late to see the dessert Oranges at their best, I decided that "Citrus aurantium Arancia Turco dolcissimo" was the sweetest Orange I had ever tasted. I was surprised to see such a fine crop and was informed that a few years ago the trees were in a very bad state, destined (by the Italian Agricultural Inspector) for destruction, but it was decided to try and save them; so a trench three feet deep and two feet wide was dug all round the roots at varying distances of three feet to five feet from the stem, according to the strength of plant; this was then heavily manured, well soaked with sewage water and then covered over with dry soil to conserve the moisture. The trees were pruned lightly and during the summer sprayed with sewage water, with the result that all the trees are now in very robust health and have evidently rooted afresh. A tree with one thousand Oranges still hanging on it makes one wonder if this system could not be applied to some of our old decrepit Apple and other fruit trees in this country.

A Clematis Armandii pergola winds through the Citrus plantation, leading to the vineyard and Iris walk, under Olives, from which one gets a glorious view of the azure-blue Mediterranean sea.

The ascent commences on the opposite side under an avenue of Olives, beneath which are growing Rosa indica major, Irises, Tulips, Echiums and bulbs of all kinds. The whole of the hillside in the distant view from this point, belongs to the estate, and is beautifully wooded, the principal trees growing under natural conditions being Eucalyptus, Pinus, Juniperus, Olives, Laurus, Paulownia, Araucaria, Sterculia, Cupressus, Sequoia, Salisburia, Ailanthus, with undergrowth of Coronilla, Rosemary, Smilax, and Myrtle. This woodland walk has a charm of its own.

The old Roman road passes through the lower portion of the garden and is still preserved, although when outside the estate one is no longer able to trace it because of modern buildings, etc.

I was fortunate enough to meet Commendatore Cecil Hanbury who told me that the gardens were commenced by his father in 1868 and have been open to visitors on Mondays and Fridays, on payment of a small fee, and the money thus collected is devoted to local hospitals and charities. In 1924 there were 10,000 visitors!

The Palazzo, or mansion, stands on a plateau at an elevation of about 180 feet above sea level, and is typically Italian in style; many additions were made to the old 15th century building by Sir Thomas Hanbury, K.C.V.O. On the South Terrace there is a formal garden commanding fine views of Bordighera and Mentone, whilst on the North front there is a distant view of Ciotti Church, perched on the top of an Olive-studded hill.

Not only did I find my guide a very keen gardener and most methodical, but on entering the Herbarium and Library he turned botanist. In this building is a seed department in which are stored 2,000 different kinds collected from the garden for distribution to various botanical and other institutions throughout the world; 13,000 packets were sent out free of charge in 1924 La Mortola is a botanical garden laid out with great taste, and a visit affords a most pleasurable and educational day when one is in the South of France.

The workmen employed are all Italians and respond well to good leadership. In the nursery were 40,000 plants in pots, grown for this year's decorative effect. I noticed several young Italian lads being trained in the work. There is practically no glass, and such plants as require a little protection are wintered in frames. Propagation is also done in frames or under hand-lights.

I was rather impressed with the fact that the deciduous trees, such as Cherries, Peaches, etc., were only just blooming—not much earlier than they are in England—although there was such a luxurious growth of many plants that bloom in the summertime in England. Mr. Braggins informed me that this year the season was quite a fortnight or three weeks later than usual and that they had a very cold February on the Riviera. *E. A. L. Laxton.*

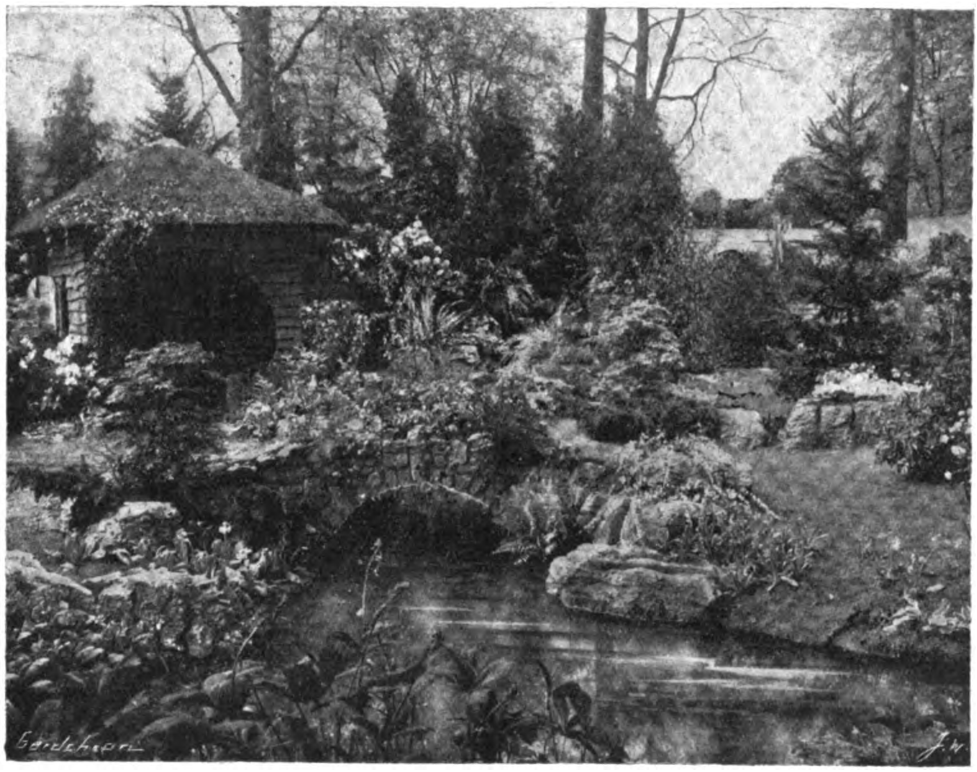


FIG. 169.—MESSRS. BAKERS GARDEN AND TEA HOUSE AT CHELSEA SHOW.
(see p. 379).

HARDY FRUIT GARDEN.

BIENNIAL CROPPING IN APPLES.

On page 339 *Market Grower* adverts to this fascinating and, to me mysterious, problem once again, and makes direct reference to Bramley's Seedling as departing from its normal characteristic of alternate-year-bearing in the present season. Further, he notes that his Lord Grosvenor "had to be thinned severely and yet they are going to bloom again profusely." It is my opinion that *Market Grower* goes a long way towards a solution of the problem of biennial bearing when he states, "because two wet seasons have allowed the trees to make full use of the foods in the soil."

In experiments commenced before the war and then compulsorily interrupted, regular summer feeding of Bramley's Seedling gave crops four years in direct succession. At the outset the trees grew enormously and fruited in alternate years, whereas their companions in one portion of the plantation—Stirling Castle—refused to make growth but cropped heavily each season. This seemed to point to a shortage of nutrition to meet the dual demand of bearing and growing in the one case, but abundance for the former alone in the other case. This theory is supported in more limited degree by *Market Grower's* experience with Lord Grosvenor. Control trees, comparatively near yet sufficiently far distant as to be uninfluenced by dressings given, maintained their normal habits and demonstrated that feeding repressed extension and encouraged bearing in Bramley's Seedling but that it did not influence growth in Stirling Castle. It was concluded, therefore, that the spur leaves of the latter were fully adequate to the necessary food assimilation, yet not equal to assisting additional growth. Three or four different dressings were tried, including diluted liquid natural manure, which invariably proved to be the best. In cases where applications were extended purposely late in the season no benefit, rather prejudice, was observable, so that food needs to be applied before growth has slowed down entirely.

During the war the late Mr. Bickham, of Ledbury, summer-fed Bramley's Seedling with concentrated foods compounded after a soil analysis, with results that satisfied him fully, but, unfortunately, made the rather common error of having no control trees. *W. T.*

NEW STRAWBERRIES.

Three new Strawberries were included in Messrs. Laxton Bros.' exhibit of these fruits at the Chelsea Show. The variety Robust, which is illustrated in Fig. 170, is a main crop variety. The raisers describe it as a strong grower, producing fruits of rich colour and good flavour. The cropping qualities are also said to be very good.

Laxton's Rearguard is one of the latest of Strawberries and is a cross between Laxton's Latest and Omega and intermediate between its two parents. It is said to surpass both of them in colour, cropping, and flavour. The fruit is large, wedge-shaped, bright red in colour, sweet and appetising in flavour.

The third of Messrs. Laxton Bros.' novelties, Laxton's Empress, is said to be an improved Vicomtesse Hericart de Thury. It is similar in colour to the old variety, but larger in size; the berries are of good flavour and very firm in texture.

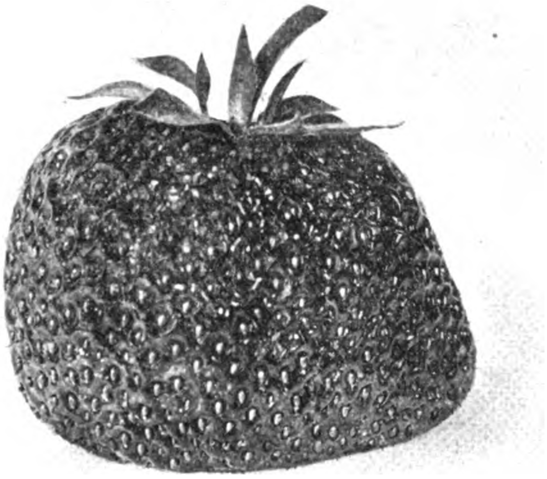


FIG. 170.—STRAWBERRY ROBUST.

HOME CORRESPONDENCE.

Daisies on a Lawn.—Whilst mowing to-day a peculiar thing came to my notice. Whilst the remainder of the lawn, which was a fairly large one, was a white carpet of Daisies, a stretch about thirty-three-yards by twelve-yards was practically bare — the Daisies could be counted on one hand. The lawn is laid over chalk, sloping north, and to my knowledge has not been dressed, or the weeds dug out; at least during the past four years. Is it possible there is a stretch of soil they do not like; are Daisies so very particular, or is it just mere coincidence? The grasses appear to be the same in both places, though of a very poor character. Perhaps one of your readers could enlighten me or quote further instances. *E. J. Bryant, Corner House, Purley, Reading.*

Iris tectorum.—It is to be hoped that the interesting note by Mr. W. Logan on page 295 may lead to increased attention being paid to the charming Iris tectorum. We seldom meet with it, yet it is a lovely thing in the rock garden, and still more charming when on the roof of a low outhouse, where it can be grown with success. Some years ago I had in my garden a low, lean-to outhouse, roofed with slates, which I covered with Sedums, Sempervivums, and Bearded Irises. Near the front I planted Iris tectorum, which throve and flowered well in a sunny place. All these plants were grown in about two inches of soil, which was as much as I could venture to risk because of its weight on the roof. I found I. tectorum quite hardy there, but, like the larger Bearded Irises, it had to be weighted with stones over the rootstocks until the roots had taken firm hold of the soil. I frequently think what good use might be made of I. tectorum on straw, reed, or Heather-thatched roofs of garden structures in our own country, just as in Japan. *S. Arnott.*

Potato Breeding.—In answer to your correspondent, Mr. E. G. Evans, who desires to have information concerning immunity to common scab and high resistance to late blight, I have the following comments to make. 1. The variety immune to common scab is a German one, viz., Richter's Jubel. This variety has only been grown in Britain on a small scale, and extensive tests have not been made with it in this country. Nevertheless, in the country of its origin, all authorities are unanimous in classifying it as immune to common scab. It is also immune to wart disease. 2. As previously stated, recent breeding has concerned itself mainly with the production of varieties which are immune to wart disease—blight resistance and other qualities being to some extent neglected. However, increasing attention is being given to late blight. There are many new seedlings of exceptional merit in blight resistance, but of the named varieties, one might be permitted to make the undernoted grouping, which, of course, must not be presumed to be complete. I have not differentiated between the susceptibility of the foliage as distinct from that of the tuber, although such differences exist. *a*. Very highly resistant—Arran Consul; *b*. Highly resistant — Kerr's Pink, Irish Chieftain, Langworthy, Duke of Perth, Incomer, Arran Victory; *c*. Resistant—Ally, Lochar, Rhoderick Dhu. *Thomas P. McIntosh.*

Primula pulverulenta, Bartley Strain.—Judging by the amount of correspondence I have had there seems to be a good deal of misunderstanding about these Primulas. They are *not* hybrids, but pure P. pulverulenta; nor are they the variety Mrs. R. V. Berkeley. This variety was a sterile sport, which originated in the Coombe Wood Nursery of Messrs. J. Veitch and Sons, and, therefore, could not be raised from seeds. As it was such a beautiful plant, I started some years ago to try and obtain a fertile form that would reproduce itself from seeds. After several years' work, I obtained a strain that gave a fairly good percentage of pink forms, which has now become one-hundred-per-cent. true. In this strain there are four or five different pink forms, all good enough to keep, and this year I have about 12,000 plants, out of which I have found only five reverting to the type—i.e., the purplish crimson flower—so that there is now no question about its reproducing pink. As the various forms appeared to be more attractive in a mass mixed together, I have never troubled to isolate and grow each one separately, and as the bumble bees cross the flowers of the different shades, so the seeds from any one form will reproduce all or any of the various shades. No doubt by isolation any particular form could be reproduced exactly from seed. The plant is easily grown, is of very good constitution, and thrives in a cool, moist, shady place where it does not get waterlogged. I have found that they make excellent plants for a cold greenhouse, and are very decorative pot plants. It has been suggested to me that I should use some name by which they may be identified. I have, therefore, decided to use the name above, which describes the various shades as a whole, but the following have been named:—Lady Thursby (A.M. R.H.S., 1924), rose-pink, yellow eye; Bartley Blush, blush-pink, with a light eye; Hew. Dalrymple, blush-pink, with a dark eye; and Bartley Pink, pink, with a light eye. *G. H. Dalrymple, Bartley.*

SOCIETIES.

CHELSEA SHOW.

(*Concluded from p.* 364.)

Formal Gardens.

THESE were, as usual, arranged along the Elm Avenue, and the tall trees gave grateful shade, whilst their close environment enhanced the effect of all. The gardens were all of different design, and visitors marvelled at the wonderfully realistic effects produced by the designers.

Messrs. R. WALLACE AND Co. utilised water extensively in their design of a restful garden (Fig. 159, p. 359), in which the Heather-thatched summer-house, standing on a terraced bank, dominated the whole. It was a particularly charming garden, enclosed with tall Conifers and a wealth of beautiful shrubs, and about the middle, on one side, was one of the most successful rock gardens in this series of beautiful gardens, down ravines of which swept alpine Phloxes, Gentians, Androsaces, Iberis, and Saxifragas, with Ferns in cool spots and shrubs that sweep over stones, such as Juniperus tamaricifolia, J. prostrata, and J. Kosteri. On the outskirts were handsome Japanese Maples, Rhododendrons, Azaleas and Brooms; whilst under the overhanging trees were perfect specimens of choice Rhododendrons. Mr. Robt. Wallace gave special and personal attention to the designing and planting of this successful effort.

Messrs. J. CARTER AND Co. designed and planted a circular garden (Fig. 168), backed by tall columnar Conifers, a most imposing and dignified scheme in which a circular pool, with fountain, on generous lines, occupied the centre, this being surrounded by panels of Stocks in red and pink colours set in a grass lawn. The scheme included a terrace flanked with a dry wall, in which hung down clumps of mauve Aubrietias and with a row of miniature Azaleas on the top. In shrubberies were splendidly flowered Rhododendrons of large size. The approach to the terrace was up two flights of stone steps, and on the terrace were some exquisite statuary and a marble bird bath, whilst at the opposite end was a magnificent old garden seat in marble. The inclusion of four glorious plants of blue-flowered Hydrangeas in leaden beakers on pedestals around the pool, were the envy of all who love beautiful plants.

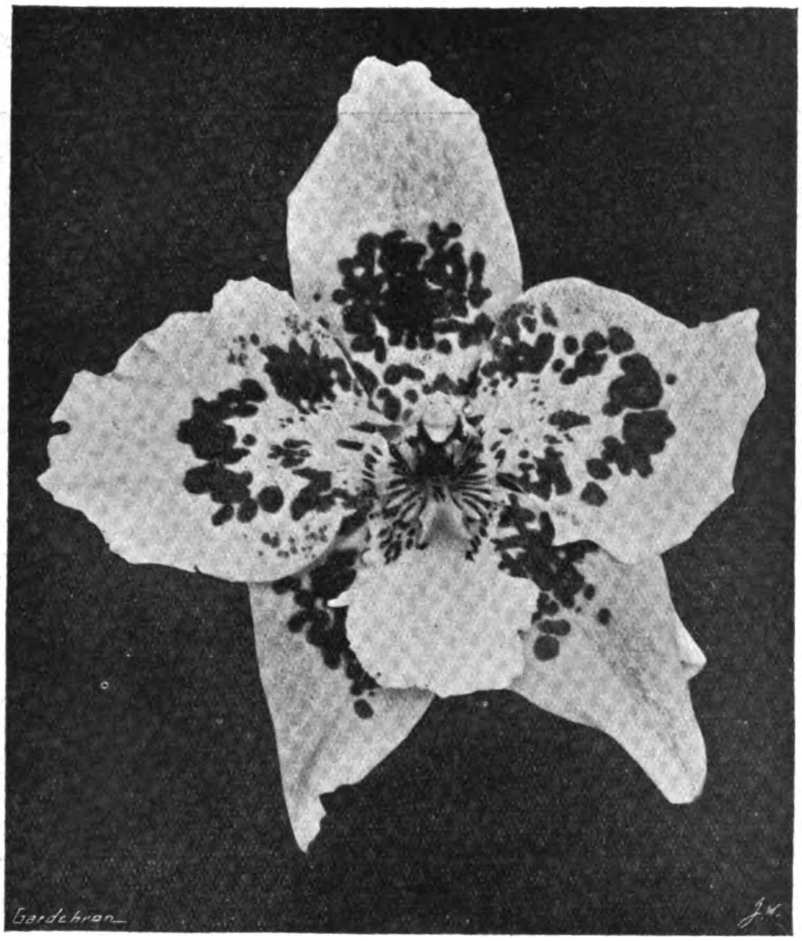


FIG. 171.—ODONTIODA ORESTES VAR. MAJESTICA.

R.H.S. Award of Merit, Chelsea Show. Flowers blush-white with chocolate-red markings. Shown by Messrs. Cowan and Co. (see p. 355).

Messrs. W. H. GAZE AND SONS, LTD., Kingston-on-Thames, worked many features of interest into their rock and water garden (Fig. 167)—pool, stream, rockery, sunk flagged garden, terrace, summer house, and broad lawn with stones to step on when dews make grass treacherous to traverse. The summer house, perched on the rockery, seemed set in a bower of flowers and coloured foliage, and nothing added to the gaiety finer than the old-fashioned Madwort, by side of which the Saxifrages seemed dull. Its neighbour, Cheiranthus Allionii, was massed too severely to reveal its true beauty, but Aubrietias, Dresden China Daisies, and Viola gracilis always look well in dense patches, and these were a mass of flowers. Much prettier was a solitary plant or two of Myosotis dissitiflora by the margin of the water, near a clump of double Trollius europaeus.

Messrs. BAKERS, Wolverhampton, introduced a very pleasing stream, crossed by a stone bridge, in their charming design of a flower garden, which contained a Heather-thatched summer-house of rustic Elm boards. The trickling stream, that meandered through a well-conceived rock garden, was in admirable taste, and here and there old Westmorland weathered stone cropped out of the turf, which gave a cool setting to the whole (Fig. 169, p. 377). The inclusion of Conifers, Japanese Maples, graceful Birches, and flowering shrubs gave additional pleasure and variety, whilst patches of brilliant flowers at appropriate spots, and especially the fine clumps of various hardy Primulas near the waterside, served to make a bright and attractive design.

Messrs. J. CHEAL AND SONS, Crawley, arranged an informal garden, which took the form of a grassy dell through which a stream flowed, the water trickling into a basin from rock work, which gave scope for the display of choice alpines and Conifers with adpressed growth, such as Juniperus Pfitzeriana and J. tripartita. The garden was bounded by a dry wall enclosing a terrace, on which was growing a wealth of beautiful Conifers and ornamental-leaved shrubs. The garden was surrounded by serpentine paths of crazy stone that led past borders of beautiful flowers—Azaleas, Lilacs, Heucheras, Brooms, etc.

Mr. JAMES MACDONALD, Harpenden, arranged a garden most attractively entirely with grasses. The scheme was a rectangular garden intersected with broad-flagged paths, with a sundial in one quarter furnished with established cultivated turf as level as a billiard table and of very fine quality texture grass. The opposite quarter had a pool and water fountain edged with such grasses as Elymus glaucus, Festuca stipioides, Carex japonica variegata, Glyceria spectabilis, Phleum aureum, and, in panels near by, were Eulalia gracillima, Holcus mollis, Dactylis elegantissima, Arrhenatherum bulbosum, and Eulalia japonica variegata. The major portion of the garden was set with a lawn of fine grasses, growing in boxes, while a background of Pines, with stone seat, gave a fine finish to what was at once a novel and delightful garden.

Mr. REGINALD WINDER, Norwich, made a sunk garden, surrounded with beds of Roses in octagonal form and Roses on pillars and chains as a boundary. A summer-house had Dorothy Perkins Roses festooning the front, and in the forecourt was a paved terrace, accommodating seats which permitted a view of the sunk garden and its central water basin with Water Lilies.

Mr. JOHN KLINKERT, Richmond, planted a large garden wholly with topiary specimens in Box and Yew, the former, with the young, green foliage looking very healthy, but the effect was sombre and formal, although satisfying to those who care for "conceits" that gave pleasure to old-time gardeners.

Messrs. W. WOOD AND SON, Taplow, arranged a delightful little sunk garden as a setting to two beautiful summer houses, the one of Elm, treated to produce the beautiful silvered effect that this timber displays with age; the other of Cedar shingles, and with a roof of the same. The former had a roof of reed thatch, a notable example of the thatcher's art, and would be worthy of inclusion in any garden. The sunk garden was approached through a pergola, and on either side of this were seats, sun-dials, fountains, and other garden ornaments.

Messrs. R. AND G. CUTHBERT, Southgate, had an Azalea garden, to show what a glorious and brilliant effect these floriferous plants display in spring and early summer. Beds cut in turf were filled with plants, some dwarf, others arising above them on tall stems. The one large bed had cream and pink sorts in association, the other white and yellow with standards of cream, and others of yellow Azaleas above. The broad border around the garden was planted with varieties of Ghent, mollis, sinensis, and rustica varieties.

Messrs. VERNON BROS, Kensington, laid out a formal garden representing a back garden in a London residence. The whole was enclosed with a trellis, on which were growing

Roses, Ivy, and Jasmine, which all do well in towns. There was a broad, terraced court-yard with water pool in the centre and borders on either side, with Pansies, Brooms, Fuchsias, Geums, Aubrietias, Pinks, Saxifrages, and Iberis.

Messrs. **REAMSBOTTOM AND CO.**, West Drayton, planted a little formal garden with Anemones of the St. Brigid type. The plants were massed in little beds of one variety. with an end bed of mixed sorts. A leaden fountain with a cupid supporting a bird bath formed a pretty centre piece set in the turf.

Messrs. **JOHNSTONE, GARDEN CONTRACTOR, LTD.**, Adelphi, London, arranged a sunk garden with ornaments, such as vases and bird baths. They planted several beds with Hydrangeas and enclosed the whole with a Yew hedge.

Mr. **ERNEST DIXON**, Putney, constructed a rectangular sunk garden, with walls of stone slabs, the garden having a rockery at one end and the sides planted with flowering plants and shrubs. Three steps were provided as approaches to the garden and in one part was a recess with a stone seat. Behind the formal garden Mr. **DIXON** arranged a rockery dell.

Messrs. **MAXWELL AND BEALE**, Broadstone, had a formal garden enclosed with a dwarf wall in stone and on the top of the wall was planted double-flowered Gorse and small Cupressus. The lower portion was paved as a court with a central well, complete with windlass and bucket and a thatch-covered canopy. Four oval beds were planted with Berberis and Maples in association.

HORSECOMBE QUARRIES AND STONE WORKS CO. arranged a formal garden in which stone paving and stone ornaments predominated.

Hardy Plants and Flowers.

Not the least interesting feature in this section was a large group of Delphiniums set up by Messrs. **BLACKMORE AND LANGDON**, Bath, and it is questionable whether the firm has ever shown a finer lot. Amongst the various shades of colour, the following varieties were very striking. Lizzie Van Veen, Mrs. A. J. Watson, Constance, Glory, Mrs. Townley Parker, Lavender, Nora Ferguson, Blue Boy, and Blue Queen.

Lupins were the chief feature in a varied collection of hardy plants staged by Mr. T. **CARLILE**, Twyford, Berks, and conspicuous amongst these were Pink Pearls, Apple Blossom, Saxe Blue, Cross Roads, and Downer's Delight. Pentstemon Bridgesi in this group, as well as Iberis Climas, were also effective and displayed to advantage.

Messrs. G. **GIBSON AND CO.**, Leeming Bar, Yorks., sent an interesting collection of plants, but the arrangement was a little too flat to be really effective. Daphne Cneorum and a new dark Wallflower called Glory of the Parks were the chief features in the exhibit.

The corner of one large tent was occupied by Messrs. **WATERER, SONS AND CRISP**, and conspicuous in an attractive exhibit were Lupins Delight, Mayflower, and Dresden China; Iris magnifica, Anchusa Opal, Verbascums vernale and W. Walker, with a charming variety of German Iris, the whole being tastefully and artistically arranged.

The gems of the collection of hardy flowers shown by Messrs. M. **PRICHARD AND SONS**, Christchurch, Hants., were the beautiful Primulas pulverulenta Lady Thursby, Bartley strain, Bartley Blush, Bartley Pink Hew, and Dalrymple, but there were many other interesting plants in this exhibit which attracted much attention. Primula pulverulenta Lissadel hybrids, and P. japonica played a big part in the exhibit of Mr. E. **GALLAGHER**, Reading, and there were also Columbines in variety and plants of very good strains of Pansies, Violas and Mimulus.

In a round, central bed, all to themselves, the Polyanthuses and Auriculas, with Aquilegias in the centre, shown by Messrs. **STORRIE AND STORRIE**, Glencarse, were very attractive, but the arrangement of the plants was somewhat crowded. The border of Auriculas with which the collection was edged was particularly pleasing.

Charming in arrangement and bewildering in variety is a description which applies to the collection of hardy flowers staged by Messrs. **BEES, LTD.**, Liverpool. It would be difficult to say which were admired most, the Beesian Columbines, the Beesian Polyanthus, the Primulas in variety, the old Wistaria sinensis, the Liliums or the border Auriculas, also Beesian.

Delphiniums in various shades of colour, Spanish Irises and Tulips in variety, largely made up the exhibit set up by Messrs. **HEWITT**, Birmingham, and some attraction was added by the dainty baskets in which the flowers were shown.

From Messrs. **RICH AND CO., BATH**, there came a small exhibit composed chiefly of Violas and Pansies with a background of Tulips.

Mr. G. A. **MILLER**, of Wisbech, put up a collection of flowers that would have been more attractive if it had been less crowded. In the exhibit there were two good Polyanthuses called Miller's Yellow and Miller's White.

Messrs. **REAMSBOTTOM AND CO.**, West Drayton, Middlesex, staged an exhibit of their well-known St. Brigid Anemones, the varied range of colour of which was much admired.

THE ORPINGTON NURSERIES COMPANY, Orpington, Kent, made an effective display with German Iris, Cytisus Beanii, and a number of hardy Azaleas. The green bowls used for displaying the Irises were well adapted for the purpose.

THE MAYTHAM GARDENS, Rolvenden, Kent, made a dainty little garden with a grass plot in front, and partially surrounded by a border, in which were Azaleas, Campanulas, Irises, and single Paeonies, the effect of the arrangement being very pleasing and natural.

Quite a pretty group of hardy plants was arranged on the ground by Mr. E. **SCAPLEHORN**, Beckenham, Kent. There were Tulips and Azaleas in the centre, and on the outskirts masses of Hesperis matronalis alba plena, Daphne Cneorum, Primulas in variety, Verbascum densiflorum, and Phlox Laphamii.

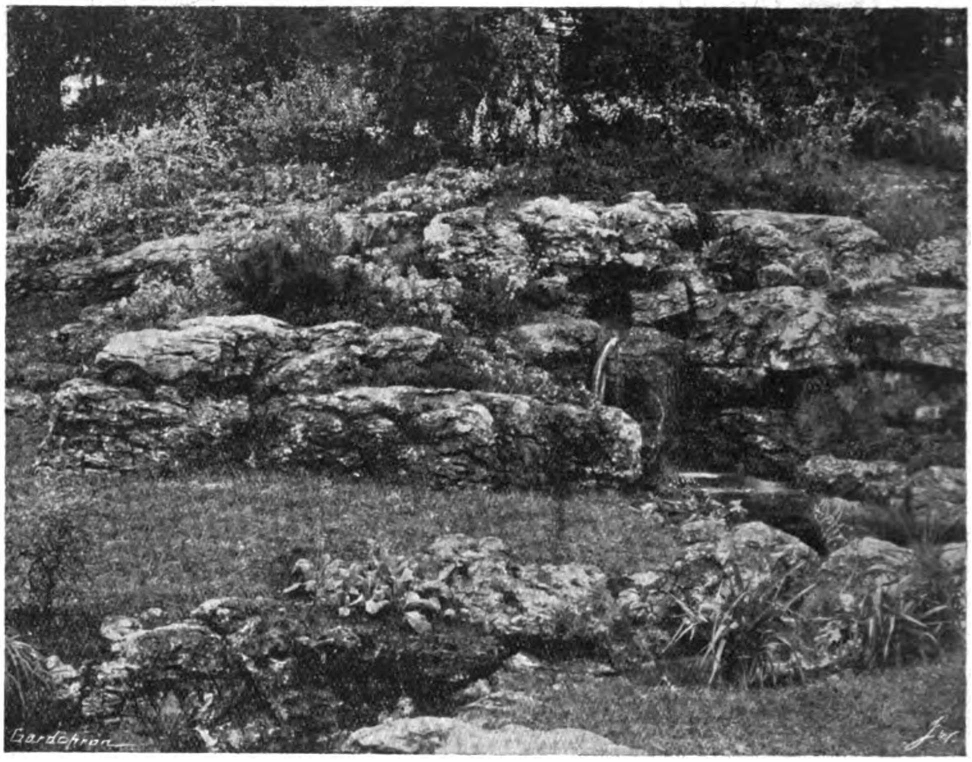


FIG. 172.—MESSRS. PULHAM AND SON'S ROCK GARDEN AT THE CHELSEA SHOW.
(*see* p. 381.)

Quite charming was the choice collection of hardy Primulas and Auriculas staged by Dr. **MACWATT**, Duns, Scotland; highly interesting features in the exhibit were the different plants representing the P. capitata group. There was something particularly choice and rare in this collection which appealed to the visitors.

Unique and highly effective were the hardy Marigolds (Ball's Calendula) shown in baskets by Messrs. W. **ARTINDALE AND SON**, Sheffield, and here one saw evidence of the developments made with this common old flower. In the front of the exhibit there were some very charming varieties of Viola.

THE ALDERSEY HORTICULTURAL COLLEGE, near Chester, put up a group of Primula helodoxa, and if there had been more variety in the exhibit it would have been more attractive.

In a collection of hardy flowers staged by Messrs. B. **LADHAMS, LTD.**, Southampton, the most conspicuous features were a double Myosotis called Orion, Mimulus Ladham's Scarlet, a red Daisy called Shirley, Cheiranthus Little Gem, and a variety of Primula japonica called Etna.

Messrs. **DE GOEDE BROS.**, Haarlem, Holland, staged a very charming collection of Dutch Irises along with some beautiful Anemones. Amongst the Irises the varieties praecox, Imperator, Van der Helst, White Excelsior, Bosboom, and David Teniers, were much admired.

Violas were not exhibited to the extent they have been at some previous shows and one of the best collections staged was that from Mr. H. **CLARKE**, The Greenway Nurseries, Taunton. The flowers were tastefully arranged and included quite a large selection of varieties. Mr. J. **FORBES**, Hawick, Scotland, also staged a nice collection of Pansies and Violas. Mr. **WILLIAM YANDELL**, Maidenhead, who also showed Violas, filled the space allotted to him with a choice collection of blooms, amongst which many of the best varieties were represented. The memory of James Douglas Senr. seemed to be revived in the exhibit of Auriculas in pots which were shown by the Great Bookham firm and the varieties staged represented many of the best members of this charming family of spring-flowering plants. Though the date was early for Paeonies these showy flowers were represented in a collection staged by Mr. F. Gifford, Hornchurch, and they do not fail to attract considerable attention.

Shrubs in the Open.

In addition to the collections arranged in the tents some exhibitors were given spaces outside, where they had opportunities of arranging their trees and shrubs under more natural conditions.

Near the tents, Messrs. Arthur Charlton and Sons displayed well grown shrubs in variety. Those which attracted most attention were Kalmia latifolia, in considerable quantity; Sophora viciifolia, in most elegant foliage, Corokea virgata, many Maples, including the finely divided foliage forms of the Japanese Maples and Acer Negundo variegata; many valuable Brooms and a number of Rhododendrons and Azaleas.

At the embankment end of the Lime Avenue Messrs. L. R. Russell, Ltd., had two large groups of considerable attraction. In one Azaleas and Rhododendrons of the best varieties, provided brilliant colouring. Of the Rhododendrons the very best were Alice, Corona, Bagshot Ruby, Cynthia and Pink Pearl. The Azaleas were mostly of the showy mollis and rustica types and the masses of double flowers of Azalea rustica Aida, violet bordered with rose-pink; Freya, yellow and rose flushed with pink; Phoebe, sulphur yellow; and Ariadne, white, lightly flushed with rosy-purple, were very effective. Amongst many foliage shrubs they included a number of Japanese Maples,

Japanese Maples of all possible variations of foliage and colouring were grouped by Messrs. W. Fromow and Sons, and these required a large area to fully display their charms. Intense, deep crimson colour was provided by Acer palmatum sanguineum, A. dissectum atropurpureum and A. dissectum ornatum. A. sanguineum variegatum, combines rich colour with a pleasing variegation, while Acer palmatum corallinum has a fascinating rosy sheen. The leaves of A. dissectum palmatifidum are very finely divided and of a pleasant, restful green.

On the opposite side of the carriage-way Messrs. M. Koster and Sons planted out a collection of Rhododendrons and Azaleas, in full bloom, and these made a welcome patch of colour. Amongst the Rhododendrons were Robt. W. Wallace, bright pink; Mrs. L. A. Dunnett, dark pink, and Enchantress.

Topiary specimens were extensively shown. Messrs. Wm. Cutbush and Son had a large number of designs perfectly fashioned in Box and, occasionally, in Yew. The executors of the late Anthony Waterer set out many specimens of spirals, pillars, columns and other designs in Yew. Messrs. Robert Green, Ltd., had an enormous number of Bay trees, many of them bearing their yellowish flowers, in pyramids, standards and in spirals.

Shrubs in the Tents.

By reason of the mass of glowing colours on well grown Azalea plants the huge exhibit of Messrs R. and G. Cuthbert was one of the most popular in the tents. They have often shown Azaleas of high quality, but we question if that of the present occasion has ever before been equalled. The mollis and sinensis varieties, which embrace the large flowers of rich glowing colours of the one with the freedom of the other, were very prominent, and most noteworthy of these were Alma Tadema, soft rose with red blotch; Anthony Koster, glowing golden yellow; Dr. Pasteur, orange with purple blotch, Duchess of Rutland, lemon and pink; Glory of Boskoop, orange with large red blotch; Hugo Koster, salmon shaded orange; Madame Anthony Koster, Apple blossom pink; Queen Victoria, cream white, daintily spotted; W. E. Gladstone, orange-yellow and Robespierre, rich pink flushed with orange. The mollis seedlings included Dulcinee, salmon-red; Esmerelda, red, General Goffinet, violet; Henri Concience, deep rose, and Souv. de Louis van Houtte, white and rose pink. The smaller, double flowered A. rustica varieties were very charming.

Anthony Koster Azalea was well shown by Mr. George G. Whitelegg, who associated a number of plants with Azalea Kaempferi, A. Hinomanyo and various Brooms.

In association with their fascinating centre piece of Liliums, Astilbes and red Maples, Messrs. R. Wallace and Co. had two groups of Rhododendrons and Azaleas. We especially noted amongst the Rhododendrons the new Britannia, Ascot Brilliant, Countess of Athlone, Compton's Brow, Corona, Pirette Forrestier, White Pearl and Mme. Gaston Chandon, though there were many other sorts of distinct merit.

With the aid of standards and Japanese Maples, Mr. T. Lewis set up a very attractive group of Rhododendrons. Unfortunately these were but rarely named. The exceptions in the matter of naming were Alice, Mrs. E. C. Stirling, Pink Pearl, Corona, George Hardy and Ascot Brilliant.

Vivid colour was provided by the massed plants of Rhododendron Hugh Koster, Edith Mackworth Praed, Madame de Bruin, Rosamund Millais, Peter Koster and other sorts in the collection of Messrs. M. Koster and Sons.

A collection of Rhododendrons arranged by Mr. Walter Slocock, contained well-flowered bushes of seven beautiful pink varieties of R. decorum, Loders' White, a blush form of R. campylocarpum, Goldsworth Pink, a pink hybrid R. Aucklandii, Goldsworth Crimson and Broughtoni aureum, the last of good yellow colour.

In association with standard Roses and Maples, Mr. Chas. Turner displayed many plants of greenhouse Rhododendrons, including R. Beadonii, R. Edith and R. exoniensis. On a table space they had a very complete collection of Lilacs; Belle de Nancy, double rose; Charles Sargent, double violet; Charles X. one of the darkest flowered, Jeanne d'Arc, double white; Marc Michell, semi-double pale-blue; Negro, single deep purple, and Waldeck Rousseau, pale lilac, are the names of a few of the very best.

A graceful group of Rododendrons was arranged by the Executors of the late Mr. Anthony Waterer. The excellent plants included Mrs. Lionel de Rothschild, Anne Lois Waterer, Attraction, G. A. Sims, of deep crimson colour, Garibaldi deep rose, Mrs. A. C. Kenrick deep blush, Lady Grey Egerton lilac blush, Purple Splendour, Edward S. Rand rosey purple, Mrs. John Millais, pale blush with green spots, and Marchioness of Lansdowne rose with chocolate spots.

The Riviera type of Rhododendron was well shown by Messrs. R. Gill and Son and the centre of the group was devoted to large trusses of Rhododendron Falconeri, Cornish Cross, marbled pink colour, a beautiful hybrid of Fortunei and Aucklandii; Gill's Goliath, blush edged with deep rose pink; Beauty of Littleworth, a very large truss of white flowers spotted with rosy maroon; Dalhousiae trumpet shaped flowers of great substance and of deep yellow colour. They also showed Embrothrium coccineum and flowers of a grand strain of St. Brigid Anemones.

Mr. R. C. Notcutt, brought a large and varied collection of hardy shrubs. Brooms were freely shown and these included Cytisus Firefly, C. albus, C. Beanii, C. Daisy Hill, C. nigricans, C. sessiliflorus, and C. scoparius Andreanus prostratus grafted some four feet high. White Lilacs included Vestale, single, Marie Legrange, double, and there were also President Grevy, double lilac, Louis van Houtte and Madame Jules Firget Spiraea confusa, Diervilla Bouquet Rose Magnolia purpurea, Pyrus Eleyii, and various Azaleas were also of merit.

A well-designed group of shrubs was exhibed by Messrs. Waterer, Son and Crisp. Rhododendrons predominated and these included such valuable sorts as Corona, Pink Pearl, Boule de Niege, Cynthia, Starfish, and the relatively new Bernard Crisp which bears large trusses suffused with Apple-blossom pink. The Rhododendrons were relieved by shapely standard Brooms in variety set at intervals.

In a semi-circular group Messrs. J. Cheal and Sons displayed Azalea Pallas, A. J. C. van Thol, and Rhododendron Pink Pearl, of large size with standards of Cytisus Butterfly, C. Andreanus prostratus, C. kewense, and C. versicolor prostrata over dwarfer plants of Acer japonicum palmatum. Rhododendron Michael Waterer, Hydrangea Madame Mouillére, Cytisus Beanii, and other useful subjects.

Large standards of Wistaria, Cytisus scoparius, grandiflorus pendulus, and double Cherries, with Bamboos made a very graceful centre to the interesting collection of shrubs so well arranged by Messrs. Hillier and Sons. Other items of value and interest include Pyrus Malus aldenhamensis; Hydrangea hortensis, of very rich blue colour; Cordyline de Grootei, Azalea Hinodigiri, Cunninghamia sinensis, Ceanothus papillosus, Magnolia alba superba, M. Soulangeana and Solanum crispum.

In the tent Messrs. L. R. Russell showed many Clematis with tall examples of Vitis Henryana, Hedera dentata variegata, H. Sheen Silver, H. Jubilee, Aralia madschuricus argentea variegata and other hardy shrubs.

Uncommonly good arrangement was displayed in the group of Mr. G. Reuthe. There were splendid plants of Crinodendron Hookeri, amply furnished with its bright pendulous flowers; Olearia semi-dentata, Solanum crispum, Magnolia Lennei, Illicium religiosum, Colletia spinosa, Embothrium coccineum, Grevillea alpina, with many Rhododendrons and Azaleas.

The Donard Nursery Co. included a large Pittosporum Silver Queen in their group of hardy and half-hardy shrubs. They also showed Ilex Pernyi, Olearia stellulata, Veronica Hectori, varieties of Ceanothus, Erica alpina, Berberis macrophylla purpurea, and many Azaleas. Belle of Woking, double silvery grey; Mrs. Cholmondeley, light blue; W. E. Gladstone, lovely lilac shade; Mme. Ed. Andre, bright red and of velvety texture; and Stella, light violet with bars of reddish Plum are desirable varieties of Azaleas.

Adjoining Mr. Perry's Ferns was an admirable group of Clematis displayed by Messrs. Geo. Jackson and Son. These were the type of trained plants bearing plenty of large flowers which has so long been associated with the firm. Of the very many splendid varieties The Bride, a new white sort; Lord Neville, dark Plum colour; Lanurtera, perhaps the largest flower of all, though the darker Lady Northcliffe was a good second in this respect; Empress of India, light violet-purple with deeper shade in the centre; and Duchess of Sutherland, bright red, shading in the centre to a light tone, were the more noteworthy.

Their novelty Broom, Cytisus Dorothy Walpole, was shown in quantity by Messrs. Wm. Watson and Sons. It is a floriferous variety of velvety crimson colour with rose coloured wings and in the open should be very effective.

On the staging the Yokohama Nursery Company set out a large number of Japanese trees of small size and apparently of great age. Such Conifers as Larix, Pinus, and Cupressus obtusa varieties were represented, and they also had dwarfed specimens of Maples, Oaks, Beech and many other species. Besides these they showed miniature Japanese gardens of considerable fascination.

Science Exhibits.

At the embankment end of the main tent a small tent was set aside for Science. Perhaps due to lack of advertising, this was not at all well patronised by the visitors, though it contained many valuable and interesting exhibits. The society itself was responsible for a large portion of the exhibits, and probably the most valuable were the specimens and diagrams showing how relatively few are the really self-fertile varieties of Apples, Pears, Plums, and Cherries. To this end the Royal Horticultural Society had large, easily-read lists and also goodly-sized fruiting trees in pots. Near by they showed various types of dwarf Beans in the form of fruiting plants in pots and in dishes of dormant seeds. The comparative cropping results of Apples propagated from parent trees of good and of bad history also told a valuable story.

The value, or rather necessity, of grease-banding of fruit trees was illustrated, and, alongside, there were examples of the insect pests of Rhododendrons, the Green Spruce Aphis, Aster Wilt, Stem Rot of Carnations, and plants affected by the new disease of Sweet Peas, and attention was drawn to the account which appeared in the Society's *Journal* last year. Diagrams illustrating the various types of Sweet Peas, and type flowers of the Dahlia classification should have appealed to lovers of these beautiful flowers.

Living examples, as well as diagrams, were shown dealing with the die-back disease of Rambler Roses. There were also models of such good and bad insects as Ladybirds, leaf-eating Weevils, Hover Flies, Wasps, Scale insects, and Cockroaches.

The Botanical Department of the Leeds University contributed "Photographs and specimens illustrating effect of lightning and of minute traces of coal-gas upon plants, and the healing of wounds." But greater prominence was given to the valuable data concerning the effect of various conditions on cut Potato sets, and the result of the experiments carried out over a considerable period showed "that sunlight or dryness causes too rapid drying of the cut surface, which cracks, allowing disease germs to enter. Shade, moisture, air, and a moderate temperature give the best conditions for the formation of an even layer of protective, corky tissue, which prevents the entry of foreign organisms and resists decay."

The exhibits from the Bristol University Horticultural Research Station chiefly concerned problems in fruit-growing. To illustrate the need for various plant foods, little bushes of Gooseberry and Black Currant had been grown with a "complete nutrient," and omitting (a) nitrogen, (b) potash, (c) phosphoric acid, and also afforded apparently, clear water only. It was, of course, abundantly clear that the Gooseberry fed with water only was a failure. The dire results of eliminating nitrogen were fully evident, but the perfect example bush was, to the cultivator, a poor thing, so that he would be hard put to arrive at any reliable conclusion regarding the need or otherwise of phosphoric acid. The examples seemed to indicate that it did not matter much whether or not calcium were present in the soil for Gooseberries, and that magnesium was even less necessary. The Black Currants were somewhat better grown, but if the Bristol Science Department wishes to impress or instruct the practical fruit grower they must grow better bushes with a "complete nutrient."

The Imperial College of Science and Technology contributed cultures of disease-producing organisms and models of the soft rot of Potatos, the black-leg disease of Potatos and Beans, and Lettuce diseases. Messrs. Chas. Hearson and Co., staged seed-testing incubators, and Mr. James MacDonald had many interesting herbarium specimens of grasses.

For the Orchidist there was the fascinating exhibit of the Clement-Armstrong asymbiotic process of the germination of Orchid seeds, with many glass tubes containing the specific fungus and seeds in various stages of germination.

Exhibits of Sundries.

Large and varied collections of the different mechanical and chemical aids to successful gardening were, as usual, displayed in the avenues, where they attracted goodly crowds of visitors who were eager to enquire into the merits of the newest type of lawn mower, and the efficacy of the various insecticides and weed exterminators.

The Abol Co., Ltd., had assistants demonstrating the easy working nature of their well-known syringe and other spraying appliances, and they also showed their non-poisonous insecticides and special manures.

Such old favourite preparations as their Lethorion Cones for fumigating, Fowler's Lawn Sand, Summer Cloud for shading greenhouses, Niquas, a non-poisonous insecticide, Slugene, Weed Death and White Fly Death, which is said to be particularly effective, were attractively set out by Messrs. Corry and Co.

Katakilla, McDougall's non-poisonous weed killer, their well-known VI. and VII. spraying fluids, and various spraying appliances were shown by Messrs. Wm. Cooper and Nephews, while The Eclipse Spraying Co. also displayed their particular type of spraying machines.

Their Multiple and Carmona specialities were prominently shown by Messrs. Robinson Bros., and these included special chemical manures for all sorts of plants, fumigating compounds, Velvas Lawn Sand, which, it is claimed, destroys all weeds in grass, and Eradiweed for garden paths. They also had many useful syringes and watering cans. Insecticides, soils, and plant barrows were well shown by Messrs. H. Scott and Sons.

The Stonehouse Works Co. had a great variety of knapsack and other spraying machines, and also their special insecticides and fertilizers. The equally well-known Four Oaks pattern knapsack sprayers and syringe were attractively displayed by the Four Oaks Spraying Machine Co.

The Holder-Harriden Spraying Machine for garden purposes was also to be seen, while Messrs. Martineau and Smith also showed their patterns.

Synthetic Farmyard Manure, which seemed pleasant to use and rich in humus, was set out by Messrs. Adco Ltd. Messrs. Allwood Bros. showed their specialised manure for Carnations, with various accessories for the same flower.

Loam of excellent quality was shown in thick, fibry turves by Mr. A B. Johnston, and the Key Fertilizer Co. had miniature lawns showing the value of their treatment. A new exhibitor in the sundries section was Messrs. Samuel McGredy and Son, who set out various accessories for Roses, and their special manure for producing show and garden Roses.

The old, tried Ichthemic Guano and Tomorite for Tomatos were both largely shown in most attractive tins by Messrs. Prentice Bros., who enhanced the attractions of their preparations with many excellent flowering plants.

Garden Tools.

In addition to the syringes and spraying machines there were many exhibits of garden tools. Messrs. Camp and Co. had useful pruners. A good selection was shown by Messrs. Holtzapffel and Co. Mr. C. A. Jardine had pruners. Messrs. R. Melhuish, Ltd., showed a large selection of useful type digging forks and spades, rakes, hoes, and other tools of a good quality were extensively displayed by Messrs. A. Smellie and Co. The Wilkinson Sword Co. showed very useful knives, scissors, and pruners.

Assistants were busily demonstrating the qualities of the extension ladders, of which Messrs. Drew, Clark and Co. displayed a wide range. These collapse into quite a small size and are capable of considerable extension. They also showed platform steps which would also be useful in the garden.

The "Willmott Rival Plant Stakes," which were exhibited by Mr. H. J. Greenwood, are excellent wire supports for plants of all kinds. By an ingenious twisting of two quite slender wires great rigidity is obtained, and this, with the various shades of green paint used, make them very inconspicuous. The grey-green of Carnation foliage, for instance, was most successfully copied, so that the stakes in a large pot-plant could scarcely be detected.

A handy little tray for sowing small seeds evenly and other useful "gadgets" were exhibited by the House and Garden Sundries Co. Vases and flower holders were shown by Mr. T. Carrie West; Mr. Wm. Linton, who also had Oak tubs; Mr. E. Sydney, and Miss A. L. Baker.

Well constructed ladders, both rigid and extension, as well as steps and trestles in a good variety, were shown by the Acme Patent Ladder Co.

The Cooper Stewart Engineering Co. displayed the Stewart Rain King Lawn Sprinkler. Mr. J. Haws had a large range of his well known patent watering cans and water carriers, and amongst their various tools, Messrs. Thomas Gunn, Ltd., showed watering pots and garden hose.

The Not-Forgotten Association included garden baskets, trays and chairs in their exhibit. Messrs. Pattisson and Co. set out specimens of their special horse boots, which are so useful for work on lawns, and also showed sprinklers and rollers. The Neuspray was shown by Mr. J. Singleton. The Cascade Nozzle was exhibited by Messrs. T. H. Webster and Sons.

Excellent metal garden labels in a great variety were displayed by Mr. J. Pinches, who also had a very good pattern bloom protector. Mrs. Torkington also showed garden labels, and the Women's Farm and Gardening Association had a selection of gloves and overalls. Trucks, ladders, and wheelbarrows were contributed by Mr. H. C. Slingsby.

Lawn Mowers.

It was chiefly the motor driven lawn mowers that were displayed in the Lime Avenue, though the J.P. Super Lawnmowers Ltd., hand machine, which by a system of gearing works very easily, was exhibited. Messrs. Dennis Bros. had several sizes of their special motor mower, as also had the Godiva Engineering Co.

Messrs. Thos. Green and Sons, one of the earliest makers of lawn mowers, showed their latest patterns, which have various improvements, and also displayed garden rollers. The "Atco" lawn mower, manufactured by Messrs. C. H. Pugh, Ltd., was prominent amongst the motor machines of medium size.

Their well-known Automaton type was included in a large selection by Messrs. Ransome, Sims and Jefferies, and Messrs. A. Shanks and Sons displayed, in their newest patterns, the result of long experience with lawn mowers.

Many improvements are claimed by Messrs. John Shaw and Sons for the "Governor" motor lawn-mower. It is water-cooled, has no superstructure; a three-section roller in their system of gearing dispenses with the chain drive.

Amongst the exhibitors of garden furniture were Messrs. Abbott Bros., who showed folding tables; The Dryad Cane Furniture Company; The Lord Roberts' Memorial Workshops; The Papworth Industries; The Paramount Furnishing Company, who had cane chairs and tables; Messrs. Smith and Ellis, Ltd., who also had included various garden tools; Messrs. T. Syer and Company; Mr. Walter Unwins; Castles' Shipbreaking Company, whose goods are made of Teakwood; Messrs. A. W. Gamage and Company, who included garden tents; Messrs. Harrods, Ltd., who set out summer-houses as well; Messrs. Hughes, Bolckow and Company and Messrs. Piggott Brothers and Company, with a large assortment of tents and canopies.

Greenhouse Boilers and Glasshouses.

Heating appliances, ranging from boilers suitable for the glasshouse covering several acres, to one adapted to the amateur's small greenhouse, were to be seen in a considerable variety. Messrs. G. Hayward and Company had their very useful patterns, as also had Messrs. Jones and Attwood.

The powerful Bisson twin-fire boilers shown by Messrs. C. P. Kinnell and Company, seemed to be somewhat of a revelation to some amateurs, who were impressed by the size and method of this type, and Messrs. J. Weeks and Company, who showed their Beeston boilers and radiators, received similar attention. Besides these giants of the garden-boiler world both firms had smaller patterns of equally good workmanship.

Well-built greenhouses of excellent design, usually with boiler and hot-water pipes, fitted with reliable ventilating gear and with attendant frames of considerable usefulness, were constructed by Messrs. Messenger and Company, Messrs. Boulton and Paul, Messrs. Duncan Tucker and Sons, Messrs. D. Swain and Company, and Messrs. Skinner, Board and Company. The Woodworkers' Ltd., had propagating frames. The Chase Continuous Cloche Company had their speciality planted with a selection of vegetables.

Extensive collections of garden sundries of all conceivable sorts were attractively shown by Messrs. Sutton and Sons, who included a great variety of garden furniture of good design; by Messrs. Wm. Wood and Son, who displayed some in their formal garden; Messrs. George Monro, Ltd., and Messrs. James Carter and Co.

Hard Court Surrounds were erected by Messrs. Bakers, Ltd. Mr. J. N. Harvey showed his fibrex plant receptacles. Garden ornaments were shown by Messrs. Kelly and Co.; The New Cross Timber Co. had rustic work; Messrs. A. H. Moorton, Ltd., displayed sundials and bird baths; Messrs. E. H. Taylor, Ltd., and Messrs. C. T. Overton and Sons exhibited bee hives; The Radium Fertiliser Co. had examples of their fertilizer, and the South Metropolitan Gas Co. set out bags of sulphate of ammonia. Mr. C. Walker set up his pattern of fruit tree protectors. Stone or lead garden ornaments were attractively displayed by Messrs. Pulham and Son and Messrs. Sanders and Co.

The London Gardens Co. had a very attractive tent illustrating florists' work and included an excellent bowl of Richardia Pentlandii.

Horticultural literature was well catered for in the Lime Tree Avenue where *The Gardeners' Chronicle* and other horticultural papers displayed current copies and various books, while the Florists' Telegraph Delivery Co. showed examples of the work of the Association.

TRURO FLOWER SHOW.

The annual show of the Cornwall Spring Flower and Daffodil Society was held at Truro Market House on the 28th ult. The Society is fortunate in having the support of some of the keenest amateur gardeners in the country, for amongst those who exhibited were Viscount Falmouth, Rev. A. T. Boscawen, Mr. A. M. Williams, M.P., Mr. J. C. Williams, Mr. R. Barclay Fox, Miss Wingfield, Sir A. P. Vivian, and Mr. E. J. P. Magor. The principal subjects exhibited were Rhododendrons and Azaleas, Roses, hard-wooded flowering shrubs and climbers, Tulips, Narcissi, Polyanthuses, Primroses and other spring flowers.

The collection of hard-wooded shrubs shown by the Rev. A. T. Boscawen included Staphylea holocarpa and the interesting Telopea oreades. Mr. J. C. Williams had a most remarkable collection of new species of Chinese Rhododendrons, not for competition.

Visitors from other parts of the country who attended were surprised at the extraordinary standard of excellence of the exhibits, which were judged by Mr. E. A. Bowles, Hon. H. D. McLaren, and Mr. W. J. Bean, who expressed the opinion that Cornwall alone in the whole of England could have produced such a collection of blooms and foliage at this season. The Hon. H. D. MacLaren's description of the Rhododendrons was "magnificent," whilst Mr. Bean regarded the Rev. A. T. Boscawen's flowering shrubs as very remarkable. The Tulips staged by Miss Wingfield, Penzance, were of outstanding merit among the flowers, while Anemones formed one of the best sections.

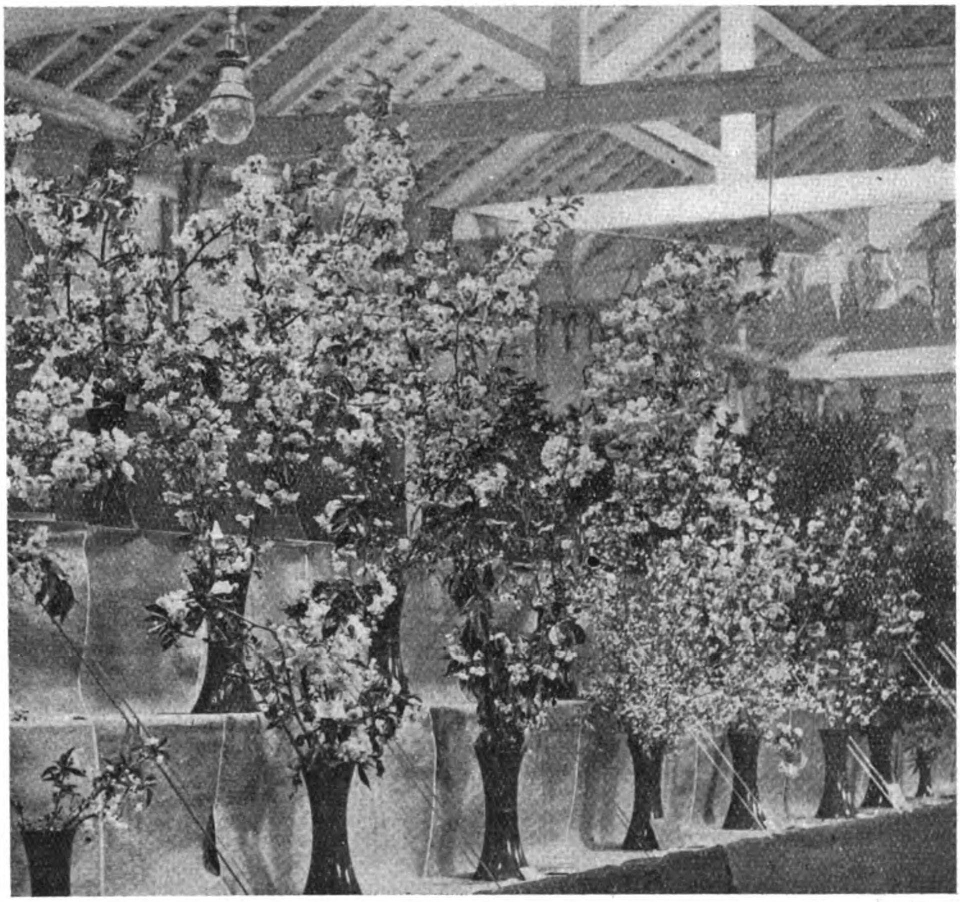


FIG. 173.—FLOWERING CHERRIES AT TRURO SHOW.

For a group of twelve varieties of outdoor flowering shrubs or climbers, but excluding Rhododendrons, the Rev. A. T. Boscawen was placed first, and Mrs. Bolitho, Trewidden, second, while in a similar class for six varieties the first prize was awarded to Mr. C. Philips, Budock, and the second to Capt. Dowman, Flushing. The finest exhibit of three varieties of Acacia was shown by Mr. C. Hext, Trebah, while in the class for one variety of Acacia, Capt. Dowman excelled. The first prize exhibit of three varieties of Cherry (see Fig. 173) was shown by Mr. P. D. Williams, followed by Viscount Falmouth and Major G. H. Johnstone in this order. The last exhibitor was first for one variety of Cherry. Camellias were shown in three classes. The best three double varieties were exhibited by Mrs. Rogers, Tregye, and the best single varieties, excluding C. reticulata, by Mr. P. D. Williams, with Mr. R. Barclay Fox second. Mr. Williams had the finest bloom of Camellia reticulata for which the first prize was awarded, but he was beaten in the class for three sprays of C. reticulata by Viscount Falmouth.

The Rhododendron classes were exceedingly good. In the most important one, that for twelve trusses of different hybrids, equal first prizes were awarded to Mr. J. C. Williams, Caerhays, and Mr. R. Barclay Fox, Penjerrick, with Mr. E. J. P. Magor, St. Tudy, third. Mr. A. M. Williams had the best twelve trusses of distinct species of Rhododendrons, followed by Mr. R. Barclay Fox.

Sir Arthur Vivian showed the finest Rhododendrons of the large-leaved type, such as R. argenteum and R. Falconeri, and Major G. H. Johnstone had the best exhibit of Chinese mountain species of Rhododendron.

Mr. S. Climas, Redruth, showed the best six vases of Roses, and Mr. G. Sharpe, the best three vases of Roses. Mr. A. M. Williams, M.P., excelled in the class for six vases of Carnations. Other winners of first prizes in the flowering plant classes were Miss K. M. Skinner, Truro, for Auriculas; Hon. Ulicke Colborne, St. Martin, for Polyanthuses; Mrs. John James, Truro, for single Primroses; Miss Daubuz for double Primroses; Mr. A. M. Williams, M.P., for a collection of hardy Primula species; Miss Wingfield, Penzance, for a collection of Tulips; Mrs. Henderson-Bull for Anemones; Capt. Dowman for a collection of twelve varieties of hardy spring flowers grown in the open, and Miss Wingfield for a collection of six varieties of hardy flowers.

A First-Class Certificate was awarded to Rhododendron lacteum, shown by Mr. A.

M. Williams, and Awards of Merit to R. Albrechtii, shown by Major G. H. Johnstone, and to R. cantabile, shown by Mr. A. M. Williams.

ROYAL GARDENERS' ORPHAN FUND.

The Annual Festival Dinner of the Royal Gardeners' Orphan Fund was held at the Hotel Victoria, Northumberland Avenue, W.C.2, on Wednesday, the 13th inst. These annual dinners are always pleasing functions and the means of raising a considerable proportion of the income of the Fund. The tables were beautifully decorated by Mr. Harry Miles with his usual artistic skill and on this occasion his design consisted mainly of yellow Tulips with red Ixias as foils. The Rt. Hon. Sir Alfred Mond, Bt., M.P., presided, and he was supported by many distinguished horticulturists, including Sir Frederick Keeble, Sir Stuart Samuel, Mr. Edward Sherwood, Mr. Noel Sutton, Mr. H. B. May, Mr. George Monro, Mr. Whitpaine Nutting, Mr. David Ingamells, Mr. J. F. McLeod, Mr. C. H. Curtis, Mr. P. R. Barr, Mr. G. W. Barr, Mr. A. Metcalfe, Mr. J. M. Bridgeford, Mr. H. J. Jones, Mr. G. F. Tinley, Mr. W. Corry, Mr. T. Pateman, Mr. W. Howe and Mr. W. Auton.

Many ladies were present and all enjoyed a most pleasant evening; the proceedings included a selection of vocal and instrumental music under the direction of Mr. Ralph Norris.

The principal toast—that of the Royal Gardeners' Orphan Fund—was proposed by Sir Alfred Mond, who said, he was present that evening to plead a cause that makes a universal appeal to all people—that of the orphan. There was nothing more terrible, he said, than the loss of parenthood to children. The Royal Gardeners' Orphan Fund was founded in the year of the jubilee of Queen Victoria with the object of making small grants to the orphans of gardeners all over the country, and the cause of the gardeners' orphan appeals to all those to whom gardening gives so much joy and happiness. Sir Alfred said there are no gardens like the gardens of England and there are no gardeners like the British people, for ours is one of the real gardening nations of the world. The necessity of a Fund like this is even more intensified to what it used to be in the olden days. He asked the guests present to support such a worthy charity, which ought to be better known. The Fund needs assistance, for the income is only £1,100 a year, and the Committee looks to the annual festival dinner as the main source to continue and extend the benefits to the orphans of gardeners. Sir Alfred appealed to all those present to do their utmost in the cause of the Fund, for the orphan is not provided for under any Government scheme.

Mr. Edward Sherwood, who responded, said that it was a very kind action of Sir Alfred Mond to preside over a function of this character. He said that during the war years they had had to expend much of their invested capital and a large sum had yet to be replaced. During the past month or two they have lost many valued subscribers to their Fund, including a vice-president, the Duke of Rutland, and Lord Leverhulme, who a few hours before his death had sent a donation for the festival dinner. Mr. Sherwood referred to the death of Sir Harry J. Veitch, a great supporter, who had passed away since the last festival dinner. He thanked Mr. G. F. Tinley for his kindness in acting as secretary to the Fund during Mr. Wynne's illness and the past year and stated that Mr. A. C. Bartlett had been elected to fill that position and by the way he had begun there was promise that he would carry out the secretarial duties in an able manner. He also thanked the Committee for the good work they had done. Mr. Sherwood referred to the Government scheme of pensions for widows and orphans, and said it would be a bad day for the morals of this country if charities of this kind were to be swept away by Government interference.

The toast of "The Visitors" was proposed by Mr. George Monro and responded to by Mr. John Douglas who said he had a great admiration for those who worked on behalf of charities. He agreed that it would be a bad day for this country when the Government interfered with charities of this nature.

Sir Frederick Keeble, F.R.S., proposed the health of the Chairman, to which Sir Alfred responded.

At this stage of the proceedings the Secretary, Mr. A. C. Bartlett, stated that the amount subscribed at and in consequence of the dinner was just over one thousand guineas. The list was headed by a donation of one hundred guineas from the Chairman and other substantial donations were £260 collected by Mr. David Ingamells from friends in Covent Garden; £68 collected by Mr. J. M. Bridgeford; 50 guineas, Messrs. Hurst and Sons; £50, Messrs. Sutton and Sons; £50, Mr. Whitpaine Nutting; 25 guineas, Messrs. Rothschild and Co.; £25, Lord Cowdray; £25, Mr. Robert Fleming; £24, collected by Mr. G. F. Tinley; 22 guineas, collected by Mr. R. B. Leech; £21 collected by Mr. J. E. Dixon; 20 guineas, the Council of the Royal Horticultural Society; £20, Mr. J. F. McLeod; £17, Mr. A. M. Falkner; £15, Messrs. George Bunyard and Co., Ltd.; £12 12s. Messrs. Corry and Co.; £10 10s. each from Sir Jeremiah Colman, Bt., Mr. Robt. B. Ker, Mr. Reginald Cory, Messrs. Barr and Sons, Mr. Peter R. Barr, and Mr. Edward Manwaring, and £10 each from Mr. George Monro and Mr, H. J. Jones.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

The monthly meeting of this Society was held at the Royal Horticultural Hall on Monday, May 11, Mr. Chas. H. Curtis presiding. Seven new members were elected. Three members withdrew interest amounting to £10 6s. 4d., five members withdrew £115 0s. 7d. from their deposit accounts, and the sum of £111 4s. 6d. was passed for payment to the nominees of three deceased members.

The sick pay for the month on the private side was £65 8s. 6d., and on the State Section £58 6s. 6d.; maternity claims totalled £6. The sum of £54 11s. 7d. was paid to members on the State Section towards their dental bills, and three other cases were considered.

The Secretary presented the report of the second valuation of the State Section, which showed a surplus of £8,298, of which £5,348 was available for disposal, leaving £2,950 to be carried forward to the next valuation. The Committee propose giving 5s. per week extra sick pay to members, 2s. 6d. extra per week for disablement, and 10s. extra for maternity benefits; grants will also be made for dental, optical, and surgical treatment, for services of nurses, and to assist members in distress to pay off arrears to keep them in full benefit. The Committee proposes also to grant sick pay from the first day of illness.

A special General Meeting will be held on Monday, June 8, when insured members will be able to approve of this alteration.

ROYAL CALEDONIAN HORTICULTURAL.

The ordinery monthly meeting of this society was held at 5, St. Andrew Square, Edinburgh, on May 5, Mr. Robert Fife, president, in the chair.

A paper was read by Mrs. Alcock, pathologist to the Board of Agriculture for Scotland, on "Some Fungus Diseases and How to Fight them." The methods of control, Mrs. Alcock stated, consisted more particularly in sterilisation of the soil.

The exhibits were:—Alpine plants, by Messrs. Dobbie and Co., Ltd., Edinburgh (Silver Medal); Antirrhium Nelrose, by Mr. D. Armstrong, The Drum, Midlothian (Cultural Certificate); seedling Rhododendron (Nuttallii × Dalhousieanum), by Mr. D. MacDonald, Trinity Cottage, Edinburgh (Award of Merit); and seedling Auriculas, by Mr. Stewart, Portobello.

Obituary.

Andrew Cunningham.—Mr. Andrew Cunningham, seed merchant, died at Glasgow on the 13th inst. in his 64th year. A native of Glasgow he was at one time manager to Messrs. J. and R. Thyne, seed merchants and florists in that city, before starting business on his own account. He was subsequently in the service of Messrs. James Backhouse and Son, York, and latterly he took over the seed business of Messrs. Fairbairn, Carlisle, and continued it in the name of A. Cunningham and Son. Some months ago he contracted an illness from which he never recovered. Mr. Cunningham was well known in the seed and nursery trade and was a man greatly respected. He leaves a widow, two sons and a daughter.

Gérard Op t'Eynde.—It is with great regret that we learn of the recent death of M. Gérard Op t'Eynde, the well-known Grape grower of Hoeylaert, Belgium, and President of the Administrative Council of the important Brussels society known as the Halles des Producteurs, or Société Horticole, Viticole, et Maraichére. *Persona grata* with all the Belgian growers, and possessing to a high degree the gift of tactful organisation, M. Op t'Eynde was appointed Director of the Halles des Producteurs in 1910, and through the difficult war years, until 1918, he carried through his task to the admiration of all In local agricultural affairs he was also extremely active, and was Secretary of the Comice Agricole at Hoeylaert, as well as Vice-President of the Conseil Supérieur de l'Horticulture from the date of its creation in 1908. His son-in-law, M. Hector van Orshoven, is known to many of our readers, as he is Chief of the Board of Horticulture, a very high position in Belgian official circles, and it is no secret that the younger man felt for the elder a very special affection and admiration. On the 10th of May, the twenty-fifth anniversary of the Halles des Producteurs was celebrated by a dinner, at which all thoughts naturally turned to the man, so lately dead, to whom as much as to anyone its success was due; many of the speakers paid warm tribute to his memory, and to the fact that he had practically consecrated the last twenty-five years of his life to the ideal of co-operation. His great hope was to see a bond of union between all producers, his chief thought the protection of their interest. He leaves a widow, Madame Op t'Eynde, with whom all will sympathise in her bereavement.

George Waller.—We regret to report the death of Mr. George Waller, of St. Albans, who died on the 7th inst., at the age of seventy-six years. Beginning his business career at the formerly well-known firm of Messrs. B. S. Williams and Sons, Holloway, he passed forty years of his life in the service of Messrs. Sanders, St. Albans. He had an unique experience in the Orchid department of this eminent firm, where he superintended the packing and despatch of many priceless specimens to all parts of the world. Mr. Waller was an untiring worker, and only retired from business life about a year ago. He is survived by two sons and two daughters, the elder son, Mr. George Waller, Junr., being well-known as the representative of Messrs. Watkins and Simpson, Ltd., for the London district.

NEW HORTICULTURAL INVENTIONS.

LATEST PATENT APPLICATIONS.

12291.—Cooke, F. H.—Boxes for flowers, etc. May 12.

12524.—Graesser-Monsanto Chemical Works, Ltd.—Extermination of insects and weeds. May 14.

12598.—Martin, P.—Lawn mowers. May 14.

12812.—Ritchie, Hart and Co., Ltd.—Horticultural, etc., implements. May 16.

12114.—Ranken, F.—Devices for holding flowers, etc., in bowls, etc. May 9.

SPECIFICATIONS PUBLISHED THIS MONTH.

233,075.—Lang, A. A. D.—Means for supporting cut flowers and the like.

231,999.—Vansittart, E.—Device for use in pruning and other cutting operations.

ABSTRACT PUBLISHED THIS MONTH.

New Rakes and Hoes. *Patent No.* 230662.

A novel construction of rake or hoe having adjustable spring tines has been protected by Mr. C. T. B. Henning, of 61, Druitt Street, Sydney, Australia. The tool consists of a series of radially extending spring tines rigidly attached about a joint towards the rear of a handle socket and passing through a transverse bar or spacing piece rigidly attached at or near the front end of the socket. The tines are approximately the same length and their downwardly turned outer ends are cut or sharpened and arranged in a straight or curved transverse line. The tool is weighted by adjustable plates detachably secured to the tines by wing bolts.

This list is specially compiled for *The Gardeners' Chronicle*, by Messrs. Rayner and Co., Regd. Patent Agents, of 5, Chancery Lane, London, from whom all information relating to Patents, Trade Marks, and Designs, can be obtained gratuitously.

Messrs. Rayner and Co. will obtain printed copies of the published specifications only, and forward on, post free, for the price of 1/6 each.

LAW NOTES.

WARNING TO SEEDSMEN.

A CASE of considerable interest to seedsmen was heard in Aberdeen Sheriff Court on Saturday, the 9th inst., when Mr. John Tennant, sole partner of the firm of J. Tennant and Son, seedsmen, Cuminestown, Aberdeenshire, was charged with having exposed for sale in his shop forty-five bushels of perennial Rye-grass seed and failed to cause to be displayed conspicuously a statement in writing setting forth their variety, purity, and germination, contrary to the Seeds Act, 1920. A second charge was that Mr. Tennant sold quantities of the seed to three different people, and failed to deliver to each of the purchasers a statement showing the variety, purity, and germination of the seed. The case was the first of the kind in Aberdeenshire, and Mr. Maclennan, procurator-fiscal, in opening the proceedings, said the case had been sent for prosecution by the Board of Agriculture. Mr. Tennant had been quite frank, and gave the names of the people to whom he sold the seed, and added that it was not worth his while to sell the stuff. In answer to Sheriff Laing, who presided, accused said he was aware of the Seeds Act, but as he had been in business for a long number of years it was difficult to refuse his customers. He pleaded guilty of a contravention of the Act.

In delivering judgment, the Sheriff said the complaint had been brought under the Seeds Act of 1920, the object of which was to ensure the purity and germination of seeds sold for agricultural purposes. Plainly the intention of the Statute was to promote both the agricultural and public interests, and, accordingly, he though it right to emphasize the fact that the Act was in existence, and that its provisions must be adhered to. This was the first case brought up under the Statute in Aberdeenshire, and no doubt the object in bringing the action was to convey a very plain warning to all seedsmen of their duty under the Act. He quite appreciated the position in which accused was placed, but, at the same time, could not omit consideration of the fact that accused admitted quite frankly that he knew what his duty was under the Act. There were four offences, and accused was liable to a penalty of £5 for each offence. He (the Sheriff) did not propose to impose a penalty of that nature, but in the circumstances he thought substantial justice would be done if he restricted the penalty to one of 15s. for each offence, or 60s. in all. The fine was paid in court.

ANSWERS TO CORRESPONDENTS.

CHAFER GRUBS IN STRAWBERRY BED: The specimen received is the grub of the large Garden Chafer. The pests are very difficult to eradicate from plots containing permanent crops. They may be attracted by placing grass turves upside down in the soil between the rows of Strawberries, these forming traps from which the grubs may be gathered. Naphthaline applied at the rate of two-and-a-half ounces to the square yard forked in and well watered will kill most of the grubs.

CONSTRUCTION OF HARD TENNIS COURT: *C. T. J.* The ground intended for the court should be well drained with three-inch land drain pipes set out in rows fifteen feet apart. The whole site should be covered with a layer of hard clinkers to a depth of four inches, and thoroughly consolidated with a heavy hand roller. The consolidated clinkers should be covered with three inches of suitable red shale—2/3 next to cinders to be half-inch material, the remainder as topping which has passed through a quarter-inch screen. The first layer of shale must be well rolled and made thoroughly firm before the topping is laid over it, and then again the whole rolled until the surface becomes hard, smooth, and of the requisite gradient. While the surface will, in all probability, retain its porosity, it may happen in time that this property may be lost, and it is therefore well to prepare for this by allowing a fall of 1 in 100 from the centre to the outer edges of the court. A lengthy description of the methods of making other kinds of hard tennis courts appeared in our issue of February 26, 1921.

CUCUMBER LEAVES PUNCTURED; *Cuc.* We have examined the leaves but cannot find any trace of fungous disease and suspect the trouble is due to some insect, although none was present on the leaves sent.

NAMES OF PLANTS: *G. P.* 1, Nephrolepis exaltata; 2, Grevillea Thelemanniana; 3, Prunus Pseudocerasus; 4, Berberis nepalensis; 5, Pyrus japonica var.; 6, P. Halleana; 7, Kerria japonica var. flore pleno; 8, Forsythia suspensa; 9, Send in flower; 10, Quercus Ilex; 11, Cupressus Lawsoniana var. densa; 12, Choisya ternata; 13, Send in flower; 14, Hymenanthera crassifolia. *S. B.* 1, Cistus laurifolius; 2, Send in flower; 3, Clematis Viticella; 4, Neillia opulifolia; 5, Berberis sinensis; 6, Spiræa canescens. *F. J. G.* 1, Ribes aureum; 2, Neillia opulifolia var. lutea; 3, Send in flower; 4, Exochorda grandiflora; 5, Prunus japonica var. flore roseo pleno. *G. R.* 1, Amelanchier canadensis; 2, Elaeagnus umbellatus; 3, Lonicera tartarica. *C. W. A.* 1, Rhododendron oreodoxa; 2, R. xanthinum; 3, R. amoenum var. splendens; 4, R. concinnum. *J. S. C.* Rhododendron fragrantissimum. *A. P. C.* 1, Sempervivum Haworthii; 2, Primula Juliae. *A. L.* 1, Vanda suavis; 2, not recognised; 3, probably Maranta concinna; 4, Calceolaria Clibranii; 5, Acacia armata; *W. H. B.* 1, Sedum Sieboldii; 2, S. Lindleyi var. variegatum; 3, Pelargonium denticulatum variety; 4, probably Pyracantha coccinea; 5, probably Humulus Lupulus. *E. G.* 1, 5, and 23, Send in flower; 2, Acer japonicum var. crataegifolium; 3, Raphiolepis ovata; 4, Unnamed form of Coleus; 6, Pyrus floribunda; 7, Cephalotaxus drupacea; 8, C. pedunculata var. fastigiata; 9, Cornus Mas; 10, Tsuga canadensis; 11, Saxifraga sp.; 12, Abutilon vitifolium; 13, Acer palmatum var. albo-variegatum; 14, Quercus Lucombeana; 15, Arbutus Unedo; 16, Euonymus japonicus var. luteus; 17, Ruscus Hypophyllum; 18, Azalea amoena var.; 19, Quercus Turneri; 20, Danaea Laurus; 21, Ligustrum japonicum; 22, Cupressus Lawsoniana var.; 24 and 25, Picea orientalis vars.; 26, Abies Fraseri; 27, Cassinia fulvida; 28, missing; 29, Phillyrea media; 30, Ulex europaeus; 31, Quercus Ilex.

SWEET PEA BUDS DROPPING: *J. E. M.* It is very difficult to determine the cause of the dropping of your Sweet Pea buds, but it is probably due to one of two things, either an excess of moisture or soil of too loose a character. Most likely the former is the cause of the trouble in your case, especially if the Sweet Peas are planted in the ground, as under these conditions they often receive more moisture than they require and the roots would be kept moist far longer than when the plants are grown in pots or boxes.

THE PROPAGATION OF VIOLAS: *R. W. B.* These plants are usually propagated by cuttings or division. The cuttings should be made from soft, tender growths and inserted when the weather is cool, as in the autumn. The old flowering growths should be cut back to within two inches or so of the base of the plant to cause the latter to develop new basal growths, the old, exhausted, flowering stems being useless for the purpose. This cutting back should take place a month before the cuttings are required. As a rule this should be done in August to produce a crop of cuttings in September and October, though one must be guided by the weather and local conditions. If hot weather prevails, wait a few weeks for cooler weather. The cuttings are taken when about four inches high, and inserted in cold frames. They will root freely in any well-drained soil of a light texture. Space the cuttings four inches apart. It is necessary to shade the plants from direct sunshine until they are rooted; this may be done with shaded lights, reed mats, or other suitable covering; the shading material should be removed every evening and replaced the following morning. So soon as the cuttings are rooted discontinue shading. The lights should be replaced when the winter sets in severely. Propagation by division of the old roots may be done at the same period or later, it being necessary that the roots obtain a firm hold of the soil before winter arrives. The old roots or stools, as they are termed, will make large quantities of young plants, for they pull asunder quite easily with roots attached. This method is largely adopted in this country for commercial purposes. The so-called exhibition varieties are reproduced by cuttings, as they do not break into basal growth so freely as the bedding sorts. The chief enemy of young Violas is red spider, but this pest may generally be combatted by spraying the cuttings with water every evening after the lights are removed.

Communications Received.—J. A. C.—W. F. F.—R. F.—H. B. M.—H. H. H. W.—A. E. T.—W. H. B.—E. G. J.—M. M.—W. H.—A. B., New York.

MARKETS.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

COVENT GARDEN, Tuesday, May 26th, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldi	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Boronia heterophylla, 48's per doz.	21 0–24 0
Cacti, per tray,	
—12's, 15's	5 0– 7 0
Crotons, per doz.	30 0–45 0
Cyrtomium	10 0–25 0
Erica, 48's per doz.	21 0–30 0

	s. d. s. d.
Erica magnifica, 48's per doz.	24 0–30 0
—coccinea, 48's per doz.	21 0–24 0
— —60's per doz.	8 0–10 0
Hydrangea	
White, 48's per doz.	18 0–30 0
—Pink, 48's per doz.	18 0–24 0
—Blue, 48's per doz.	30 0–48 0
Marguerites, white, 48's per doz.	15 0–18 0
Mignonette, 48's per doz.	15 0–18 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 0
Rhodanthe, 48's per doz.	12 0–15 0
Roses Polyantha, 48's per doz.	18 0–24 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun.	12 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays	1 6– 2 6
short „	0 9– 1 3
—Sprengeri, per bun.	
long sprays	1 6– 2 0
med. „	1 0– 1 6
short „	0 4– 1 0
Carnations, per doz. blooms	2 6 – 4 6
Cornflower, per doz. bun	4 0– 6 0
Croton leaves, var. doz. leaves	0 9– 2 6
Fern, French, per doz. bun.	0 9– 1 3
Galax, American, green and bronze, per doz. bun.	— 1 0
Gladiolus, Blushing Bride, per doz. bun.	18 0–24 0
—White, per doz. bun	12 0–15 0
—Peach Blossom, per doz. bun.	18 0–21 0
Gypsophila, white, doz. bun.	12 0–15 0
Iceland Poppies	6 0– 7 0
Ixia, red, doz. bun.	3 0– 5 0
—Mixed, doz. bun.	3 0– 4 0
Lapagerias, per doz. blooms	3 6– 4 0
Lilium speciosum rubrum, long, per doz. blooms	— —
—short „ „	— —
Lilium longiflorum long, per doz.	4 0– 5 0
Lily-of-the-Valley, per doz. bun.	15 0 24 0
Narcissus—	
—Double White, per doz. bun.	7 0– 9 0
Nigella, Blue, per doz. bun.	12 0–15 0
Orchids, per doz.	
-Cattleyas	24 0–36 0
—Cypripediums	5 0– 7 0

	s. d. s. d.
Paeonies, White per doz. bun. 6's	18 0–24 0
—Pink, per doz. bun. 12's	15 0–18 0
—Red, per doz. bun. 12's	15 0–18 0
Pyrethrum	
Double White, per doz. bun.	7 0– 8 0
—Double Pink, per doz. bun.	6 0– 8 0
—Single Red, per doz. bun.	5 0– 7 0
—Single Pink, per doz. bun.	5 0– 6 0
Richardias (Arums) per doz.	5 0– 6 0
Roses, per doz. blooms, Richmond	2 6– 4 6
—Liberty	2 6– 4 6
—Madame Butterfly	2 6– 5 0
—Mme. Abel Chatenay	2 6– 3 6
—Melody	3 0– 4 0
—Molly Sharman Crawford	2 6– 4 0
—Niphetos	2 6– 3 6
—Ophelia	3 0– 4 0
—Sunburst	3 0– 4 0
Gardenias, per box, 12's, 18's	4 0– 6 0
Smilax, per doz. trails	3 0– 3 6
Spanish Iris, per doz. bun.—	
—Blue	18 0–30 0
—Mauve	18 0–24 0
—White	18 0–24 0
—Yellow	24 0–36 0
Statice, mauve	5 0– 6 0
Stephanotis, per 72 pips	3 0– 3 6
Stock, English white	9 0–18 0
Sweet Peas, per doz. bun.	8 0–15 0
Violas, per doz. bun.	1 0– 1 6
French Flowers—	
Anemone, St. Brigid	2 6– 5 0
Marigolds, per doz.	4 0– 5 0

REMARKS.—Supplies have been very erratic during the past week, and this has caused a great fluctuation in prices. General supplies are somewhat shorter than for some time past, therefore a further increase in prices is expected during this week, especially for scarlet and white blooms, owing to the increased demand for the Whitsuntide festivities. Carnations have been arriving in good condition in spite of the hot weather. All Roses have been considerably fewer, owing to a general break between crops, and there is a shortage of good red and white varieties. Indoor Irises appear to be finishing, and at present only small consignments of outdoor blooms are available. All Tulips are practically over for this season: Clara Butt and Inglescombe Yellow are the principal sorts on sale. Narcissus Poeticus has finished very quickly: large consignments of these flowers which arrived last week-end were practically unsaleable, and difficult to clear at almost any price. Narcissus Double White is arriving in good condition, and will meet with good demand the next few days. Small consignments of double white Pyrethrum have been received from France; coloured varieties, both single and double, are coming from home growers. Sweet-scented Paeonies have also made their first appearance; these are also from France; but ordinary varieties are increasing almost daily from home growers. Other item now arriving more freely from home growers are Cornflowers, Nigellas, Gypsophila, Iceland Poppies, and Gladiolus The Bride (white). Coloured sorts have been more limited during the past few days; Sweet Peas are more numerous and some fine blooms are on offer, their prices varying from 6d. to 1/6 per bunch.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
New Zealand—	
—Cox's Orange Pippin	25 0–28 0
—Jonathan	18 0–20 0
—Dunn's Seedling	16 0–18 0
Tasmanian Pears	4 0–12 0
Tasmanian—	
—Cox's Orange Pippin	18 0–25 0
—Jonathan	14 0–18 0
—Ribston Pippin	16 0–17 6
—Cleo	16 0–18 6
—Others	16 0–17 0
Bananas	16 0–27 6
Cherries, French, per box	2 0– 2 6
per crate	10 0–14 0
Figs (Forced) doz.	3 0–12 0
Gooseberries, per lb.	0 6– 0 9
Grapes—	
—Belgian	2 6– 3 0
—English—	
—Hambro, per lb.	2 6– 5 0
—Muscat	10 0–12 6
—South African—	
—Colmar	10 0–12 0

	s. d. s. d.
Grape Fruit, Cuban	35 0–40 0
—Jamaica	35 0–40 0
—Florida, finest	35 0–42 6
Lemons, Messina, per box	9 0–13 0
—Murcia	14 0–18 0
Melons (Forced)	3 0– 8 0
Oranges, Jaffa	16 0–18 0
—Spanish—	
—300's	20 0–30 0
—360's	18 0–30 0
—504's	18 0–25 0
English Peaches, per doz.	12 0–30 0
Pears, South African—	
—Keiffer	3 0– 3 6
—Josephine	5 0– 5 6
—Nelis	3 0– 5 6
—Doyenné du Comice	6 0– 8 0
Pines	4 6– 5 0
Strawberries, per lb.	4 6– 8 0

Vegetables: Average Wholesale prices.

	s. d. s. d.
Asparagus—	
—Evesham	3 0– 5 0
—Special	6 0–18 0
—Devon	10 0–12 0
Beans, Guernsey, per lb.	1 3– 2 0
—Worthing	1 3– 2 0
—Madeira, per box	4 0– 5 0
Beets, per cwt.	5 0– 8 0
Cabbage, per tally	7 6–10 0
Canary Island Tomatos	25 0–35 0
Cauliflowers, per doz.	2 0– 3 0
Carrots, new, per doz. bun.	6 0– 8 0
Cucumbers, per doz.	6 0– 6 6
—Flats, 36's, 42's	18 0–22 0
Dutch Onions	11 0–12 0
Greens, best, per bag	4 0– 5 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundle	2 0– 2 6
Lettuce per doz.	— —
—Cos	8 0– 9 0
—Dutch, per crate	8 0–10 0
Mushrooms, cups	2 0– 2 6
—broilers	1 0– 1 6
Marrows, doz.	10 0–15 0
Mint, Forced, per doz.	2 0– 6 0

	s. d. s. d.
Onions, Valencia, per case	14 0–16 0
—Egyptian, per bag	11 0 12 0
—English, per cwt.	12 6–14 0
—Spring per doz.	— 3 0
Parsnips, per cwt.	3 0– 4 0
Peas, English per lb.	2 0– 3 0
—French, per cane	2 0– 6 0
—Guernsey forced per lb.	1 3– 1 9
Potatos, Canary Island	10 0–14 0
Potatos, per ton—	
—Dunbar	240 0–260 0
—King Edward	200 0–240 0
—Others	90 0–160 0
—New Guernsey lb.	0 4– 0 6
—Jersey	0 4½ 0 5
—Scilly	0 4– 0 5
—Spanish, new, per cwt.	36 0–38 0
Radishes—	
—Round	1 0– 2 0
Rhubarb, per doz.	7 0– 9 0
Spinach, per bushel	3 0– 4 0
Tomatos, English, per lb.—	
—Pink	14 0–15 0
—Blue	12 0–13 0
—White	12 0–13 0
—Pink White	14 0–15 0
—Guernsey	14 0–15 0
Turnips, new, per doz. bun.	8 0–10 0

REMARKS:—Trade conditions have been fairly good throughout the week. All choice fruits and vegetables have been in good demand, mainly owing to usual requirements of the London season. Australian and New Zealand Apples are in good request, and their values remain firm. Pears from Tasmania and South Africa have sold slightly better. Grapes from the Cape are going out satisfactorily. English hothouse fruits, such as Grapes, Peaches, Figs, Melons, and Strawberries are selling well. The demand for Oranges and Lemons shows some improvement. Gooseberries are more plentiful and quoted slightly cheaper. Forced Beans, Peas, and Marrows have been in brisk demand throughout the week. New Potatos from Jersey, Guernsey, Scilly, and Cornwall are more plentiful, and their values are inclined to be lower. Asparagus is arriving in larger quantities but prices have hardened and a better tone exists in this section. Cucumbers and Tomatos are a good business. Salads are selling better and are at a good price level. Green vegetables are plentiful and cheap.

GLASGOW.

Following the recent depression in the cut flower market, prices during the past week showed a fairly substantial recovery. The upward movement began on Tuesday, and made steady progress until Friday, when quotations reached the highest level of the week. Tulips, which suffered the greatest loss, made the largest gains, good blooms of Clara Butt, Farncombe Sanders, and William Copland averaging 6d. to 7d. for 6's, specials from 8d. to 1/-, and ordinary from 2d. to 4d. Supplies of Narcissi were limited to Pheasant Eye and Double White, the former ranging from 2/- to 3/-, and the latter from 5/- to 6/- per dozen. Carnations kept steady at 2/6 to 4/- all colours, while Irises made 1/9 to 2/3. Roses reflected little change, Madame Abel Chatenay ranging from 2/6 to 4/6, Richmond and Mr. H. Stevens 2/6 to 3/6, Madame Butterfly 3/- to 4/6, and Ophelia 3/6 to 4/6. Short-stemmed Sweet Peas sold at 6d. to 7d. per bunch, and superior blooms brought up to 1/2, Lilium longiflorum (Harrisii) made 3/- to 4/-, Gypsophila 6d., and Asparagus from 9d. to 1/3, all per bunch.

Bedding-out plants are now arriving in such large quantities that salesmen experienced difficulty in their disposal, and prices in consequence were cheap. Marigolds, Antirrhinums, Canterbury Bells, Stocks, Asters, Lobelia, and Violas were obtainable at 1/- to 1/3 per box, containing 18 to 24 plants. Sweet Peas 1/6, Gladioli 1/- to 1/9. Geraniums (Paul Crampel), 4/6 to 6/- per dozen pots, Marguerites 1/- to 3/- per dozen. Begonias (strong plants in pots) 6/-, Ivy-leaf Pelargoniums 3/-, Chrysanthemums (mixed) 3/- per box of 2 dozen, named varieties 6/-; and Coltness Gem Dahlias 4/- to 5/- per dozen. Tomato plants were unsaleable.

A good business was reported in the fruit market at a general advance in prices. Australian Apples were dearer, Jonathan advancing 2/- to 3/- at 19/- to 22/- per case, Cleopatra 23/- to 25/-, and New Zealand Delicious 25/- to 26/-. There was a big sale of Grape Fruit at 32/- to 34/-. Higher values were also conceded for Oranges, Valencias ranging from 20/- to 28/-, and Murcias from 28/- to 35/-. Cape and Australian Pears were steady round former quotations. Scotch and English Strawberries made 3/6 to 6/- per lb., Black Hamburgh Grapes, 3/6 to 4/6 per lb., and Peaches 18/- to 24/- per dozen.

A feature of the vegetable market was the strong demand for Potatos, Tomatos, Lettuces, and Cucumbers, with a simultaneous advance in prices. Teneriffe Potatos rose to 17/- per case, Dutch Lettuces 6/- to 7/6 per crate of 2½ dozen, Cucumbers 5/- to 8/- per dozen, Teneriffe Tomatos 24/- to 28/-. Scotch 2/- to 2/3 per lb., English 1/4 to 1/7, and Guernsey 1/2 to 1/5. Scotch Lettuces were of poor quality, and only made from 1/3 to 1/6 per dozen, while small-hearted English Lettuces realised 2/-. Asparagus fluctuated between 1/3 to 2/3. French Beans sold at 1/6 to 1/9, Turnips as high as 1/6 per bunch, and Carrots were also dearer at 10d. to 1/-.

SCHEDULES RECEIVED.

CHELTENHAM SPA FLORAL FETE.—Exhibition to be held in the Montpellier Gardens, on Wednesday and Thursday, June 24, and 25.—Secretary, Mr. C. Cassidy, 58, High Street, Cheltenham.

ROUNDHAY (LEEDS) HORTICULTURAL SOCIETY.—Exhibition to be held in Roundhay Park, Leeds, on Tuesday and Wednesday, July 14 and 15.—Secretary, Mr. Geo. E. Horner, 67, Jackson Avenue, Roundhay, Leeds.

GARDENING APPOINTMENTS.

Mr. F. E. C. Blackman, for the past five years Gardener to MRS. A. S. HAY, Sacombe Park, Ware, as Gardener to H. O'HAGAN, Esq., Riverhome, Hampton Court, Middlesex. (Thanks for 2s. for R.G.O.F. Box.—EDS.)

Mr. G. T. Watson, previously Manager to the AMATEUR GARDENERS' SOCIETY, LTD., Warley, Essex, as Gardener to PHILIP LYLE, Esq., Wancote, Compton, Guildford. (Thanks for 2s. 6d. for R.G.O.F. Box.—EDS.)

Mr. R. C. Harris, for nearly two years Gardener to Captain V. BIRCH-REYNARDSON, Rushington Manor, Totton, as Gardener to SIR CHARLES BARRINGTON, Bt., Fairthorne Manor, Botley Hampshire.

CATALOGUES RECEIVED.

F. FINNEY AND CO., LTD., 18, Grainger Street, Newcastle-on-Tyne.—Seeds.

G. BECKWITH AND SON, Hoddesdon, Herts.—Roses (Wholesale).

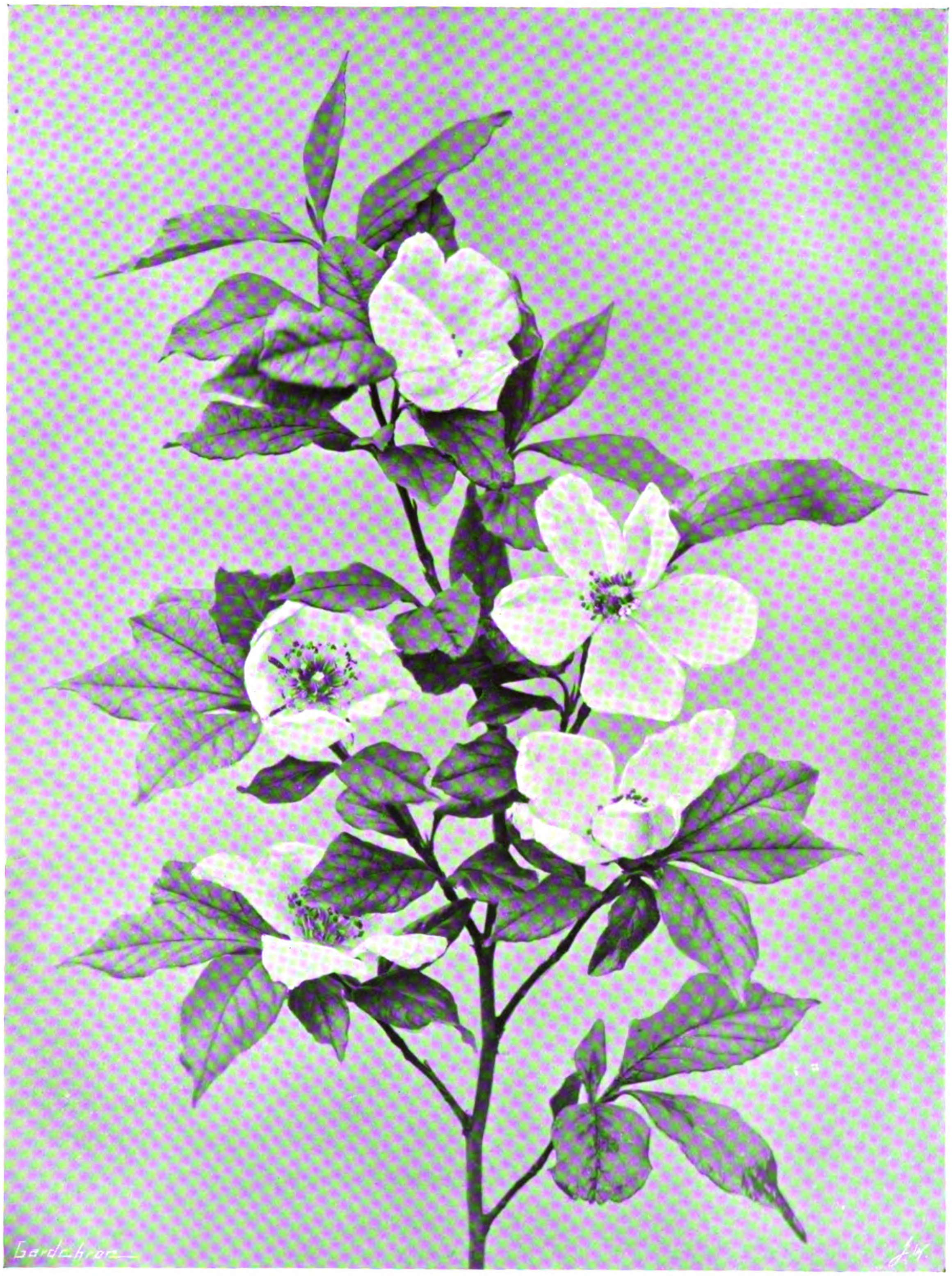
JAMES MACDONALD, Harpenden, Herts.—Lawns.

GEO. MONRO, LTD., 4, Tavistock Street, Covent Garden, W.C.—Sundries (Wholesale).

D. G. PURDIE, 6, Waterloo Street, Glasgow.—Summer bedding plants, sundries.

HURST AND SON, 152, Houndsdith, E. 1.—Perennial and biennial flower seeds (Wholesale).

Supplement to The GARDENERS' CHRONICLE



STUARTIA MALACHODENDRON.

Photo C. P. Raffill

THE
Gardeners' Chronicle
No. 2006.—*SATURDAY, JUNE* 6, 1925.

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Supplementary Plate.
Stuartia Malachodendron.

Average Mean Temperature for the ensuing week deducted from observations during the last fifty years at Greenwich, 58·2°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, June 3, 10 a.m. Bar. 30·4, temp. 60°. Weather, Sunny.

Phosphatic Manures.

The results of several very different investigations into the importance of phosphates on the fertility of plants make it worth while hazarding the suggestion that gardeners generally might, perhaps, improve the yields of their crops by a more frequent use of phosphatic manures. Of the investigations in question, one seemingly far removed from the domain of horticulture has, nevertheless, a great theoretical and practical interest. Experiments carried out by Dr. Atkins, of the Marine Laboratory, Plymouth, appear to show that the amount of the floating (plankton) life which is to be found in a given volume of sea-water is determined by the amount of phosphates which the water contains. In the course of the year the microscopic and mainly plant organisms which make up the floating population of the sea—on which ultimately all other marine life depends for sustenance—extract from the sea-water all the phosphates which it contains. If much, they reach their maximum numbers; if little, the plankton organisms remain few in number. But if storms by disturbing the deeper waters of the sea bring more phosphates to the surface there is a yet further increase in the amount of living organisms produced there. It is indeed an ill-wind that blows nobody any good; and if the winds which evoke the storms were responsible for an increase in the plankton then any bad weather from which we may suffer ought, at all events, to serve to reduce the price of mackerel and other marine fish! The second set of observations which have evoked the suggestion already made—that phosphatic manure might with advantage be somewhat more generally used—relates to phenomena noted in the course of trials with basic slag and Gafsa (mineral) phosphates on poor pastures in Wales. The experiments carried out by the University College of North Wales in association with certain Welsh county councils do not, on the whole, confirm the opinion which has often been expressed that a dressing of basic slag or similar phosphatic manure is almost certain to prove beneficial. In these poor soils, at all events, the phosphate often failed to produce an amelioration of the grass. This, however, is beside the present question. What bears upon it is the observation that, contrary to the general opinion, phosphates applied to the soils tend to disappear from them in the course of a few years. They had not passed into the plant nor had they washed out altogether from the soil. Estimation of the phosphate-content of successive layers of the soil showed that the top dressings had gradually passed down into the deeper layers of the soil—out of range of root action. If this indeed held generally, then two conclusions of importance to gardeners are to be drawn from it. First, that apart from special applications of phosphatic manures to certain crops—Potatos and Peas, for example—which most gardeners make, it would be well to give a general light dressing of phosphates to soils apt to be deficient in them, at intervals of a few years. One very convenient way of doing this is to add basic slag sparingly to the manure and compost heaps as they are being accumulated layer by layer. The other conclusion is that the beneficial effects of trenching may be attributable in no small part to the recovery of manurial residues of phosphates which have gradually washed down into the deeper layers of the soil. Yet one other suggestion may be ventured. When quick-acting nitrogenous manures are used—nitrate of soda and sulphate of ammonia, for example—the effect is to promote leaf and stem growth, but not to the same extent to promote, but rather to check, root growth. The advantage of the former, no doubt, outweighs any disadvantage which may be inherent in the latter; but the facts would indicate that the addition of a little quick-acting nitrogenous manure to the superphosphate might have very beneficial results in the early stages of growth of all or most plants. Curiously enough, this practice is almost invariably followed by Potato growers, who use often when planting, a dressing of sulphate of ammonia and superphospate, together with a little potash. The beneficial effects of this system of manuring have been often and amply demonstrated. The system might well be extended, particularly in such a late year as the present. The discovery of the sinking down of phosphates in soil lends an added cogency to the parallel between the routine ploughing of the land and the occasional ploughing of the sea by storms. By both operations phosphates essential to life and luxuriant growth are brought within reach of plants hungry for them.

Kew Exhibits of Plants of Botanical and Educational Interest.—On several occasions during recent years some remarkably interesting exhibits of plants have been made at Kew, illustrating the horticultural evolution of certain popular garden plants. The interest thus created and fostered by the Director, Dr. A. W. Hill, has led to an extension of this method of educating the public in general, and horticulturists in particular, and we are delighted to learn that it will now be possible to make exhibits of botanical, horticultural, and educational interest throughout the year. A new house (14c) has been set apart for this purpose, and it was opened to the public on Tuesday, June 2. This house is situated next to the Orchid houses, and contains a collection of Calceolarias; namely, C. cana and the various hybrids which have resulted from crossing C. cana with C. herbacea and other species. C. cana is a small, hoary-leaved species from Chili, with Violet-scented flowers, and the hybrids which have resulted from it show the hoary leaves of C. cana, while the flowers show a wide range of colours, from white, through yellow, to a deep purple-red. Other species represented C. angustifolia, C. amplexicaulis, C. dentatus, C. integrifolia, C. Pavoni, C. corymbosa, and C. virgata. The South-American Calceolarias have the characteristic pouched flowers, but there are four exceptional species which have open, helmet-shaped flowers, two of which occur in South America—C. violacea and C. punctata; and two in New Zealand — C. Sinclairi and C. repens Plants of C. violacea and C. Sinclairi are exhibited. Another exhibit shows the development of the garden Petunia from the two wild species from the Argentine and Uruguay, namely, P. integrifolia (syn. P. violacea) and P. nyctaginiflora. Specimens of these two species are shown, together with one of the earliest garden hybrids, which has beautiful pink flowers, and modern garden derivatives with pink, deep purple, and white flowers. Petunia integrifolia is better known as P. violacea, and was received as such by the Glasgow Botanic Gardens during 1831, seed being sent by John Tweedie, then resident at Buenos Aires. A hybrid between this species and P. nyctaginiflora was raised during 1833, and numerous garden forms were soon raised by various growers. Petunia integrifolia was lost to cultivation for many years, until 1916, when Kew, after several failures, reintroduced it through the kind offices of the late Mr. C. E. R. Rowland, then Vice-Consul at Monte Video. An interesting new South African Composite, Venidium Wyleyi is also exhibited, raised at Kew from seed received from Miss Wilman of Kimberley, the well-known South African botanist.

A Short History of the Bearded Iris.—Mr. T. Hay, Superintendent of Hyde Park, has sent us a copy of the Iris notice which has been prepared for the purpose of drawing the attention of the public to the value of Irises in town and other gardens. Our readers will remember that last year a short history of the Dahlia was published and placed close to the Dahlia borders in several London parks. The Short History of the Bearded Iris has been prepared by Mr. W. R. Dykes and consequently is authoritative. Typed copies of it are available and may be had by park superintendents on application to Mr. T. Hay, Park Superintendent's Office, Hyde Park, W. 2. The following is the text of the "history."—"These Irises must be among the oldest of cultivated plants, for they are represented on an Egyptian bas-relief depicting the Syrian Garden of Pharoah Thothmes III, about 1500 B.C. and the fact that a variety from the Mediterranean region was found to be naturalised in Nepal as early as 1800 is good evidence of their popularity. The ease with which they can be cultivated has doubtless added to their popularity and has also helped them to spread into countries of which they are not natives. When the foliage withers in summer, the rhizomes or creeping stems may be left out of the ground for several weeks or even months without doing any serious harm to the plant and thus they are easily transported from place to place. One species, at least, which is a native of Arabia, I. albicans, has been taken by the Mahommedans, wherever they have penetrated, and used to decorate their graveyards, with the result that it has become naturalized all round the shores of the Mediterranean and even been carried from Spain to Mexico. John Gerarde, whose Herbal was published in 1597, knew Iris pallida, which he called the Great Flower-de-luce of Dalmatia, and Parkinson in 1629 described in his Paradisus Iris variegata, with yellow standards and purple-veined falls, which has combined with Iris pallida to give us the first of the innumerable hybrids which are now available. Pallida 'Como' is a typical Pallida from the north of Italy, while 'Harmony' represents rather the type of Pallida which is found along the Dalmatian coast. Among the varieties grown here the following may be noticed:—'Alcazar,' which was raised in France and which is valuable to the breeder for its tall sturdy growth and for the good substance of its flowers; 'Dominion,' which should be compared with the older 'Black Prince' and which was the forerunner of a new strain remarkable for the velvety texture of the outer petals; 'Queen of May,' an old and still popular variety of a pinkish shade which has now been surpassed by 'Aphrodite;' 'Iris King,' a fine specimen of the variegata section, to which 'Maori King' also belongs, was raised in Germany; 'Lent A. Williamson' is one of the best varieties raised in America, and another is 'Quaker Lady.' The chief requisites for the successful cultivation of these Irises are (1) a sunny, well-drained position; (2) a soil which is not deficient in lime, old mortar rubble being an excellent addition. The best time for planting is the period from the middle of August to the middle of September, and the rhizomes should be planted almost on the surface. If they are deeply buried, they do not get the ripening from the sun, without which they are never healthy."

National Sweet Pea Society.—We would remind our readers that the annual show of the National Sweet Pea Society is arranged for July 16 and 17 next at the R.H.S. Hall, Vincent Square, Westminster. In the near future the Committee of the N.S.P.S. will meet to consider its show for 1926, therefore the Secretaries of provincial societies desirous of inviting the N.S.P.S. to hold the show in conjunction with theirs should communicate with Mr. A. C. Bartlett, 318, Kew Road, Kew, Surrey, who will supply all information and schedules.

Inspection of Tithe Documents.—The Tithe Branch of the Ministry of Agriculture and Fisheries will be removed from Whitehall Place, London, S.W. 1, to 7, Old Bailey, London, E.C. 4 (telegraphic address, "Agritithe Cent, London"—Telephone, Central 7192), on June 22, 1925. As a consequence, the Ministry's inspection room will be closed to the public from June 2 to June 20, 1925 (inclusive), in order to enable the staff to arrange for the removal of the documents and their re-deposit in the new premises. No instruments relating to tithe rentcharge, extraordinary tithe rentcharge, tithe rates, and corn rents, will be available for inspection during that period. The public are reminded, however, that statutory copies of tithe apportionments, tithe maps, and certificates of capital value of extraordinary tithe rentcharge affecting land in England are, as a rule, deposited with the diocesan registrar and the incumbent and churchwardens of the parish, and, in case of urgency, these copies might be inspected during the period when the Ministry's inspection room is closed. Inclosure awards and schemes confirmed by Metropolitan Commons Scheme Confirmation Acts will not be affected by the removal, and such of these documents as are deposited with the Ministry will continue to be available for inspection at 10, Whitehall Place, London, S.W. 1.

Prof. F. W. Oliver, F.R.S.—At the anniversary meeting of the Linnean Society held at Burlington House, on May 26, the gold medal of the Society, its highest award and one with an international reputation, was presented to Francis Wall Oliver, Quain Professor of Botany in the University of London. The Linnean Medal is awarded to a botanist and zoologist in alternate years and there can be no doubt that the council's choice of this year's recipient was an exceedingly popular one. Prof. F. W. Oliver was born at Richmond, Surrey, in 1864, and was the eldest son of the late Professor Daniel Oliver, the Linnean Gold Medalist of 1893—so far the only case of father and son receiving the medal. His university education was at University College, London, and Trinity College, Cambridge. Since then he has been actively engaged in botanical research. At first his investigations were on general botanical subjects—floral biology, saphrophytism, sieve tubes of sea weeds, and so on; an investigation of special interest to horticulturists was that on the effects of urban fogs upon cultivated plants. Later the work became centred more particularly on seeds, both recent and fossil and on ecology. It was Oliver's pioneer work in the study of fossil seeds which led him to the discovery of the relationship between Lagenostoma and Lyginodendron and the existence of Pteridosperms. In ecology he was one of the members of the "Vegetation Committee" which eventually developed into the British Ecological Society, in which he has always been a very active force. His studies of seashore vegetation, salt marsh and shingle beach are of extreme tropical and economic interest. The translation of Kerner's *Natural History of Plants* in 1894 did more to popularise botany in this country than any other book. Other editorial work has been in connection with the *Annals of Botany*, and the series of works—*Makers of British Botany, Exploitation of Plants, Life and its Maintenance.* With A. E. Carey he wrote *Tidal Lands: A Study of Shore Problems.* He was President of Section K at the British Association meeting at York in 1906, and President of the British Ecological Society, 1915 and 1916. No account, however brief, of Professor Oliver's work could omit mention of the great influence he has had on botanical studies in this country. Following his father at University College, he has been a guide to almost forty years' supply of students. But apart from his own colleagues and students, many working botanists find in the botany laboratories of University College a social atmosphere and an enthusiasm it would be hard to match. Professor F. W. Oliver has been a frequent contributor to these columns.

PROF. F. W. OLIVER, F.R.S., D.Sc.

Presentation to Mr. H. B. May.—We are glad to learn that subscriptions to the H. B. May presentation now exceed £280. Mr. H. B. May's portrait by Mr. T. Martine Ronaldson is completed, and is considered to be a striking likeness as well as a fine piece of work. The presentation will be made by Lord Lambourne on behalf of the subscribers on the occasion of Mr. May's eightieth birthday, on Saturday, June 20, at a dinner to be given at the Grosvenor Hotel, at 6.30 p.m. Tickets for the dinner are 8s. 6d. each. Those who propose to attend should notify Mr. George Monro, 4. Tavistock Street, W.C.2.

Honour for Mr. George Monro.—In the King's Birthday Honours list we were glad to find that Mr. George Monro, of Messrs. George Monro, Ltd., Covent Garden, has been created a Member of the Order of the British Empire for services rendered as a Commandant in the Metropolitan Special Constabulary.

Mainz Rose Show.—Mainz (Germany) will be, on July 11, and for a little over a week from that date, the scene of a Rose Show and Fête, to take place in the local park. About twelve thousand Rose trees are being planted in a portion of the park set aside for the purpose; the planting is to be done partly in terraces, each colour being grouped and graded so that the white of the first terrace will gradually flush to pink, and then increase in depth until deep red is reached. A Rhenish festival, with the motto "Rhine and Rose" is to form part of the proceedings.

Sweet Pea Mary Pickford.—At the National Sweet Pea Society's trials in 1924 a Sweet Pea originally named Sylvia, was submitted by Messrs. C. C. Morse and Co., San Francisco, under the name of Miss Delight; it received an Award of Merit. It is a fine cream, pink variety, not yet in commerce, and we understand its name is to be altered to Mary Pickford. It appears that the famous moving-picture lady is to perform some special service at the forthcoming Seed Convention at Los Angeles, and on that occasion the new Sweet Pea will be presented to her under her own name, and so Sylvia, syn. Miss Delight, will become Mary Pickford.

Educating Working Foresters in the North.—Some weeks ago the executive of the Royal Scottish Arboricultural Society resolved upon an excursion to northern woods in the interests of working foresters in northern Scotland. The Excursion Committee of the society has now drawn up a programme, the details of which are as follow:—From June 22 to June 27 is the period chosen, and the headquarters will be Inverness. The party will first visit the Forestry Commission's operations in Glenmhor, where much valuable information and insight to a working forester's day will be given. A whole day will be devoted to visiting part of the extensive woodlands on the Earl of Moray's Darnaway estates, near Forres, where magnificent specimens of trees will be found. Through the kindness of Lord Novar, a visit will be paid to that nobleman's forests in Ross-shire. Here the party will find the results of numerous silvicultural experiments carried out by his lordship, all of the most informative kind. Here, also, are to be seen plantations of exotic Conifers and of Larch underplanted with exotic Conifers, besides several of the Forestry Commission's experimental thinning plots. The proceedings will close with a visit to the woods around Beaufort Castle, the Scottish seat of Lord Lovat. Needless to say, much and valuable information will be gleaned in the woods belonging to one so devoted to forestry, and whose work for it cannot be over-estimated. At Beaufort Castle, near Beauly, there are capital plantations of many exotic Conifers and magnificent specimens of Scots Pine. Given favourable weather, the working foresters should derive much information and pleasure from their outing.

Oxford Floral Festival.—The Royal Oxfordshire Horticultural Show will be held at South Park, Headington Hill, from Monday, August 10 to Saturday, August 15 inclusive. The show will be under the auspices of the Oxford Chamber of Trade, and a silver challenge cup, together with gold, silver, and bronze medals, will be awarded to exhibitors. The secretary is Mr. H. Parker, 12, Hurst Street, Oxford.

Appointments for the Ensuing Week.—Sunday June 7: Wakefield and North of England Tulip Society's meeting. Monday, June 8: United Horticultural Benefit and Provident Society's meeting. Tuesday, June 9: Royal Horticultural Society's Committees meet (2 days); Jersey Gardeners' Society meeting. Wednesday, June 10: Sheffield Chrysanthemum Society's meeting; Bath Gardeners' Society's meeting. Friday, June 12: Royal Society of Ireland's Council meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Amaryllis Acramanii.*—This beautiful Amaryllis has a bulb very large and round with rather a long neck. The leaves are pale green, revolute, and tapering to a point; scape two or more flowered, pale glaucous green; flowers very large and spreading; petals long, broad, acuminate, and slightly undulated; deep green at the base, becoming nearly white to about one-half their length, and from the middle to the point of each, of a very fine deep rich scarlet, beautifully lined and reticulated with deep crimson, extending over the whole except the central stripes, which are white and broad; the sides of the base of each petal are richly marked with deep brownish purple. The stamens are about one-third their length green, the remainder fine bright red: the pistil is similarly coloured. The anthers before bursting are a rich purple; farina yellow. This magnificent hybrid was raised in 1835 between A. aulica platypetala and A. psittacina, and flowered March 22, 1839. The above is a copy of the original description of A. Acramanii, which I made at the time of its first flowering. It was named in honour of Mr. E. Acraman, a gentleman of this city. The origin of A. Acramanii pulcherima which was shown at the last Chiswick fête, differs from that of A. Acramanii in being a cross between A. aulica and A. Johnsoni, but we were induced to give it that name in consequence of its resemblance to the original A. Acramanii in the size and form of its flowers; but its colours are far more beautiful; indeed, amongst the number of varieties of this truly magnificent tribe which I have had the good fortune to raise, none have yet equalled the one in question in brilliancy of colour and general good qualities. *James Garaway and Co., Bristol, Gard. Chron., June 8, 1850.*

Publications Received.—*Winter Botany.* By William Trelease. Second edition, revised. William Trelease, Urbana, Illinois, U.S.A. Price $.50.—*Fruit Growing Do's and Dont's.* By J. Turnbull. Methuen and Co. Ltd., 36, Essex Street, W.C. Price 2s. 6d. net.—*Bulletin of the Iris Society.* Nos. 1 and No. 2. Secretary, Mr. G. N. Bunyard, Bower Mount, Maidstone.

PLANTS NEW OR NOTEWORTHY.

RHODODENDRON LEDOIDES.

RHODODENDRON ledoides, Balf. fil. et W. W. Smith, was first met with by Mr. G. Forrest, in 1913, to the north-east of the Yang-tze bend. Plants raised at Kew from seeds sent by Mr. J. C. Williams, flowered in 1916, and were figured in the *Botanical Magazine*, tab. 8831.

In 1921, Mr. F. Kingdon Ward met with this species again on open Pine-clad slopes at 12,000-feet to 13,000-feet, near Muli, in Szechuan. Lord Headfort raised plants from Kingdon Ward's seed (K.W. 4,160), and exhibited them recently at the Chelsea Show, where the species obtained an Award of Merit (see Fig. 174).

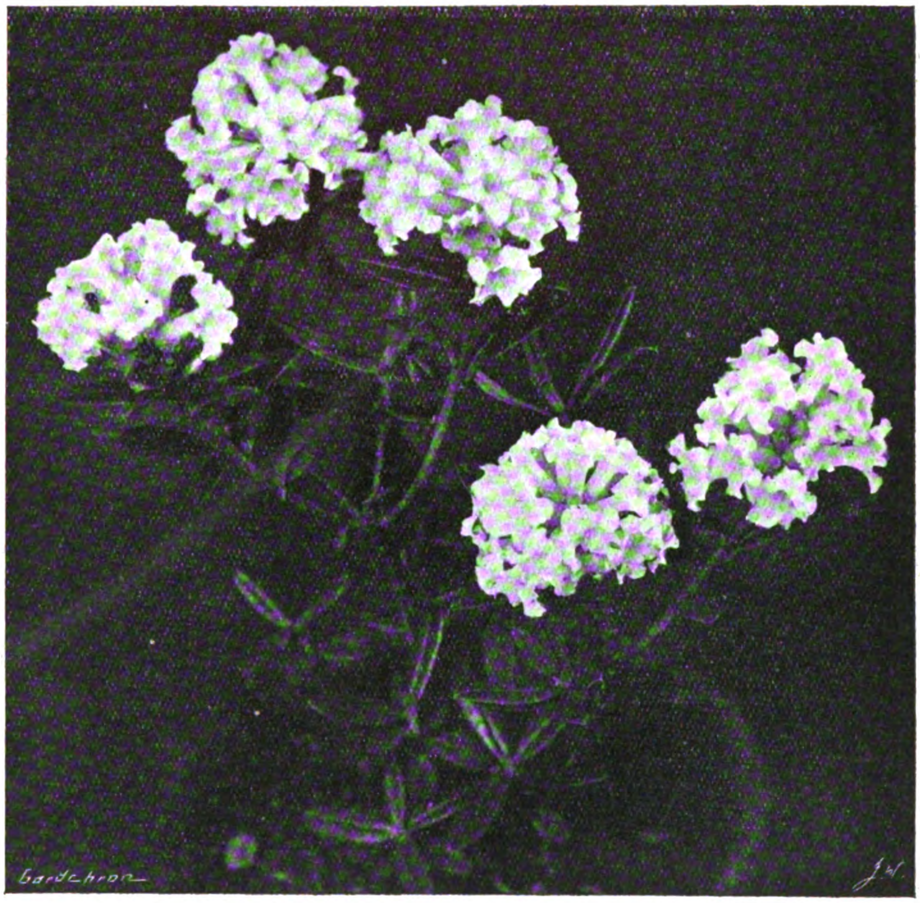

FIG. 174.—RHODODENDRON LEDOIDES.

Messrs. Hilliers have a stock, and R. ledoides is now on the market. R. ledoides, which belongs to the Cephalanthum series, is a close ally of R. sphaeranthum (see Fig. 146, p. 342, *Gard. Chron.*, May 23), from which it is distinguished by technical differences (see *Notes*, R. B. G., Edinburgh, Vol. IX., p. 243). It is a small undershrub plant, twelve-inches to eighteen-inches high, with aromatic foliage and tight, globular heads of white or blush-pink flowers—not lavender, as figured in the *Botanical Magazine*. In its native haunts it covers many square miles of open fell, associated with R. racemosum and various 'Lapponicum' species. It is a plant for the rock garden, or may be massed in beds like R. racemosum.

HOLBOELLIA CORIACEA.

WHILST journeying in Western Hupeh during the month of May, 1907, Mr. E. H. Wilson came across plants of a Holboellia which, whilst obviously related to H. latifolia of the Himalayas proved to be the allied H. coriacea (Diels) which Dr. Augustine Henry had discovered years before. The younger collector sent seeds home under the numbers 146 and 2385, and from the first consignment was raised the Aldenham plant depicted in (Fig. 175). It is a member of the Berberidaceae, and as a climbing, or twining plant, with handsome trifoliate, evergreen leaves of dark glossy green hue and leathery texture, it is a decided acquisition to English gardens, when grown in the manner shown, on a structure of three poles. Our plant has reached a height of about ten feet, but has not yet flowered.

Wilson describes it as "a common climber in rocky places up to 1,300 m. altitude in Western Hupeh," and whilst it is so closely akin to H. latifolia, its foliage certainly appears to be more consistently tripartite and it is undoubtedly hardier in its nature, for on our cold, wet clay, it has passed through sharp snaps of frost unscathed.

Like H. latifolia, it is unisexual, apparently carrying both sexes on the same corymbs at times, and also having the male flowers white in colour, whilst those of the opposite sex are somewhat larger and of a purplish hue; presumably the flowers are similarly fragrant.

Following these come purple fruits, about two inches in length, and carrying many black seeds. Though the flesh of the pod is described by Wilson as being "white, watery, rather sweet but of insipid flavour," the natives, like those resident near the habitat of the Himalayan species, find them to be palatable.

This species would no doubt form an excellent wall plant, but, like Lardizabala, would probably require a large amount of attention in the way of training, nailing or tying-up, etc., so that the manner in which we have grown it at Aldenham would appear to be the best way. *E. Beckett.*

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Oncidiums.—The late summer- and autumn-flowering Oncidiums, which embrace such as O. varicosum, O. Forbesii, O. crispum, and others that have been resting since flowering are now making new growths, and so soon as young roots develop from their base, any necessary repotting should be given attention. The potting compost may consist of Osmunda-fibre and Sphagnum-moss, in about equal parts, with a few half-decayed Oak leaves added. These materials should be chopped up and mixed with a sprinkling of crushed crocks. Good drainage is essential and only a thin layer of the compost is required; this should be pressed moderately firmly about the roots of the plants. After potting them give the roots a liberal watering and allow the soil to become dry before giving a fresh supply of moisture. Oncidiums should be grown suspended near the roof-glass in a house having a cool, intermediate temperature. They are very free-flowering and frequently become exhausted under artificial cultivation, especially where the flower spikes are allowed to remain on the plants for too long a time.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Summer Bedding.—As a rule even the most tender subjects, including Heliotropes, Begonias, Cannas, etc., may be planted in their flowering quarters after this date and, provided the plants have been properly hardened, the earlier this work is completed the better. The planting is, to a great extent, a matter of individual taste, and will now be carried out in accordance with a pre-arranged plan, but where a combination of plants is employed the choice of subjects should be such that each group of plants in a combination should be at its best at the same time so as to obviate flowerless patches. Another important point is to give each plant or group of plants the position for which it is best suited and in which it will give the longest succession of flowers. Surface-rooting plants and small seedlings will need special attention in the matter of watering until they are well established. See that all plants, whether grown in pots, boxes, or frames, are thoroughly moist at the roots before removing them to the beds, and it is wise to give the beds a good soaking after planting is finished. We all hope for showery weather during the season of planting, but we are not always favoured, and if the soil in the beds is very dry it is advisable to water it the day before planting. When all planting is completed a small reserve of various kinds should be potted on and held in readiness for filling any blanks which may occur at a later date.

Azaleas and Rhododendrons.—Where grown extensively these showy shrubs are amongst the most beautiful and attractive features of the garden during May and early June. So soon as the flowers pass they should be removed to prevent the formation of seed pods, which, if left to develop, exhaust the plant's energies and impede the free growth and production of flower buds for the ensuing year. In a general way, no other pruning of these shrubs is necessary, but plants that are encroaching on walks or growing beyond the limits intended for them, may be cut back immediately after flowering, when they will break freely. Newly-made plantations should be mulched now, if this was not done immediately after planting. These shrubs like a cool rooting medium, and when growth has not been sufficient to shade the soil mulching is the only means of maintaining moisture in the ground during the hot summer months. Established plants also benefit greatly by a liberal mulch, and those who have made a habit of treating grass cuttings by fermenting it with leaves will now have excellent material available for this purpose.

Border Carnations.—The staking of these plants will be necessary so soon as the flower stems begin to ascend. Wire, spiral stakes are the most convenient, as they do away with the necessity of tying, otherwise good, wooden stakes, preferably painted green, may be used.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Chrysanthemums.—Preparations should be made for the final potting of Chrysanthemums in their flowering pots. Advantage will be gained by a timely mixing of the potting compost beforehand. Loam should form at least two-thirds of the bulk of material used at this final shift, and if the loam is of a light texture this ingredient may comprise three-fourths of the whole, other parts being made up of good leaf-mould, old hot-bed manure, sharp, coarse sand and a full bushel of crushed charcoal to ten barrowloads of soil. To each barrowload of soil add one six-inch potful of bone-meal, one three-and-a-half-inch potful of a good fertilizer, such as "Clay's" or "Le Fruitier" and one three-and-a-half inch potful of soot. If the pots in which the plants are now growing are well filled with roots it will be beneficial to apply, as a top-dressing, about one teaspoonful of one of the above-named fertilizers to the surface of each pot, about a week or ten days before they are potted. This will give the plant a fillip and have the effect of minimising the extent of the temporary check to growth which re-potting gives.

Winter-flowering Begonias.—The propagation of the tuberous-rooted, winter-flowering hybrids should be undertaken from now onwards as the cuttings become available. The stock plants need very careful treatment when starting them into growth, most of the varieties being shy to produce cuttings. These, when obtainable, should be inserted singly in quite small pots, filled with two parts of peat or good leaf-mould to one part of sandy loam, with a free addition of sharp sand. Place them in a propagating frame in a house having a temperature of 65° to 70°. Careful watering is essential at all times, and particularly in the early stages. Some of the best varieties are:—Optima, salmon; Elatior, rosy carmine; Scarlet Beauty; Mrs. Clibran, pink; Exquisite, blush; Mrs. Heal, carmine, and Pink Perfection.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley, Bury, Broxbourne, Herts.

Apples and Pears.—Continue to thin these fruits where heavy crops have set, both in the case of trees in pots and those growing in borders in the orchard house. Retain the most promising and best-placed fruits, and on no account over-crop as this gives a severe check to the trees, and the quality of the fruits will be poor. When the young shoots have made five leaves they will require to be pinched, except in the case of extension leaders; if this operation is done at an early stage it will cause the least possible check to the trees. Allow plenty of light to reach all parts of the trees, for this will greatly assist the fruit buds to form and ripen for next season's crop. Keep insect pests in check by slight fumigations and water the roots with care. Trees in pots will need examining three times each day for water. Keep the borders well supplied with moisture, giving frequent applications of weak manure, and feed the roots with concentrated manures, according to the directions given by the makers. Syringe the trees twice daily, thoroughly wetting the undersides of the foliage and admit plenty of air during spells of warm sunshine. Fire-heat may be dispensed with and the trees grown as naturally as possible, leaving a little ventilation all through the night.

Cucumbers.—Sow another batch of Cucumbers to maintain an unbroken supply of fruits. An extra sowing may be made to fill frames that are being cleared of early Potatos; good crops may be obtained in frames as the weather becomes warmer.

Young Vines.—Vines raised from eyes in January are ready for shifting into nine-inch and ten-inch pots. The compost should consist of three parts good fibrous loam, one part old mortar rubble, a six-inch pot of bone meal per barrow-load of soil, and a sprinkling of wood ash and soot. Drain the pots thoroughly so that water passes away readily, and pot firmly. These plants will make excellent vines for planting permanently in borders next spring. The young vines that were planted in March are nearing the top of the house and may be stopped or trained down to the border again. The rods of Muscat of Alexandria are much better stopped three parts up the roof and another lead taken up; this throws strength into the cane. See that the vines are well supplied with water and kept perfectly clean.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Pears.—These fruits are swelling very rapidly and where they are too numerous no time should be lost in thinning them; this work should be done periodically. In most varieties the side fruits swell to the best shape. Trees on walls should be examined from time to time to see if water is needed; this season has been very favourable so far and watering has not been necessary, but now that the trees are in full activity they absorb moisture very freely and should not be left too long after a few days of hot sunshine. When time permits the shortening of the young growths should receive attention; all side growths and the leaders not required for extension should have the tips pinched out when the new growth is about nine inches long. This will help the development of the fruit buds for another year, and it is not quite so drastic to the trees as summer pruning. Trees affected with leaf blister or curl or that are bare of fruit may be sprayed again with Bordeaux mixture.

Apples.—The prospect of a bountiful crop of Apples is, at the time of writing, very good, as there has been a wonderful show of blossom. Some of the earliest-flowering varieties, such as Hollandbury, Bismarck, and Norfolk Beauty, have already dropped their petals. Many other varieties are at their best. The later flowering sorts, such as Royal Jubilee, Edward VII., Sandringham, Crawley Beauty, and Court Pendu Plat will extend the blooming season to the beginning of June. After examining many flowers on a great number of varieties I have seen but very few weevils, and this may be accounted for by spraying the trees with a nicotine specific early in April. I have not seen cleaner or healthier looking flowers for many years, but results will depend on other factors, such as the weather of summer, caterpillars, and the freedom of the trees from the leaf sucker and the Apple scab.

Trained Fruit Trees.—All trained trees will now be making good growth, and in the cases of horizontal, espalier, or other shapes on walls, the young shoots should be trained in very carefully. If stakes are used the latter should be made very firm in the ground before tying the shoots to them. Fasten the tie quite tightly around the stake, and loosely around the growth, allowing room for the bark to swell. All unnecessary growths should be shortened a little, especially in the case of young trees; this will cause the leading shoots to become more vigorous. If the trees are trained to new galvanised wire, care should be taken to prevent the young wood from coming in contact with the wire, unless it has been painted.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Spinach.—It is often very difficult at this time of the year to maintain a continuous supply of young Spinach, owing to the tendency of the plants to run to seed during dry weather. Because of this it is advisable to make a sowing of New Zealand Spinach which will give a supply of young leaves during hot weather. Sow the seeds of this Spinach thinly, allowing two-and-a-half feet between the rows and thinning the seedlings to at least one-and-a-half foot apart.

Leeks.—A considerable number of seedling Leeks should now be planted in their permanent quarters. If large specimens are required the seedlings should be planted in prepared, well-manured trenches and earthed up as required. If ordinary plants for general use are required it will save labour to make holes with a dibber, about one foot apart, dropping one Leek in each hole, so that the tips of the leaves just show out of the top of each hole. Each hole should then be filled with water which will wash sufficient soil over the roots to cause the seedlings to start into growth. When established the plants will grow rapidly and will soon fill the holes. When the latter are filled and before wintry weather sets in, it is beneficial to draw a little fine soil up to the plants.

Vegetable Marrows.—The main crop of Vegetable Marrows may now be planted out-of-doors. If the nights are cold for a week or two yet, it is quite easy to leave a large pot or box over each plant during the nights to ensure safety. Keep a close look-out for slugs which are very partial to freshly set Marrows. Where ground is limited in gardens and it is difficult to find space for everything, it is an economical plan to grow Marrows on a rubbish heap. I have adopted this method with excellent results for several years. All rubbish from winter greens, weeds, and in fact everything except prunings, which are burned, is tipped into a heap all through the winter. The Marrows are planted on this heap now and given a barrow load of soil to every two plants; they thrive under this treatment and furthermore after each season a valuable heap of humus is obtained which is suitable for many crops and curtails the manure bill.

Staking.—This operation should be constantly attended to now. Successional batches of Peas require staking every fortnight. First outdoor sowings of Runner Beans may be staked now. Strong, tall stakes should be used for Runner Beans, to withstand high winds in autumn. Pea sticks may be used for Climbing French Beans, these being as serviceable as anything for supporting this crop.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Herbaceous Borders.—The staking of the plants calls for frequent attention. Stake in such a manner that, although held firmly, the plant will, as nearly as possible, hide the support when fully grown. Many of the plants may be supported by dead Spruce branches trimmed into shape; besides forming excellent supports, Spruce branches are not readily detected amongst the plants.

Hardy Annuals.—Keep a close watch on annuals already sown out-of-doors. Slugs are the worst enemies of the seedlings and must be kept in check. It is not too late to re-sow where blanks have occurred in the beds.

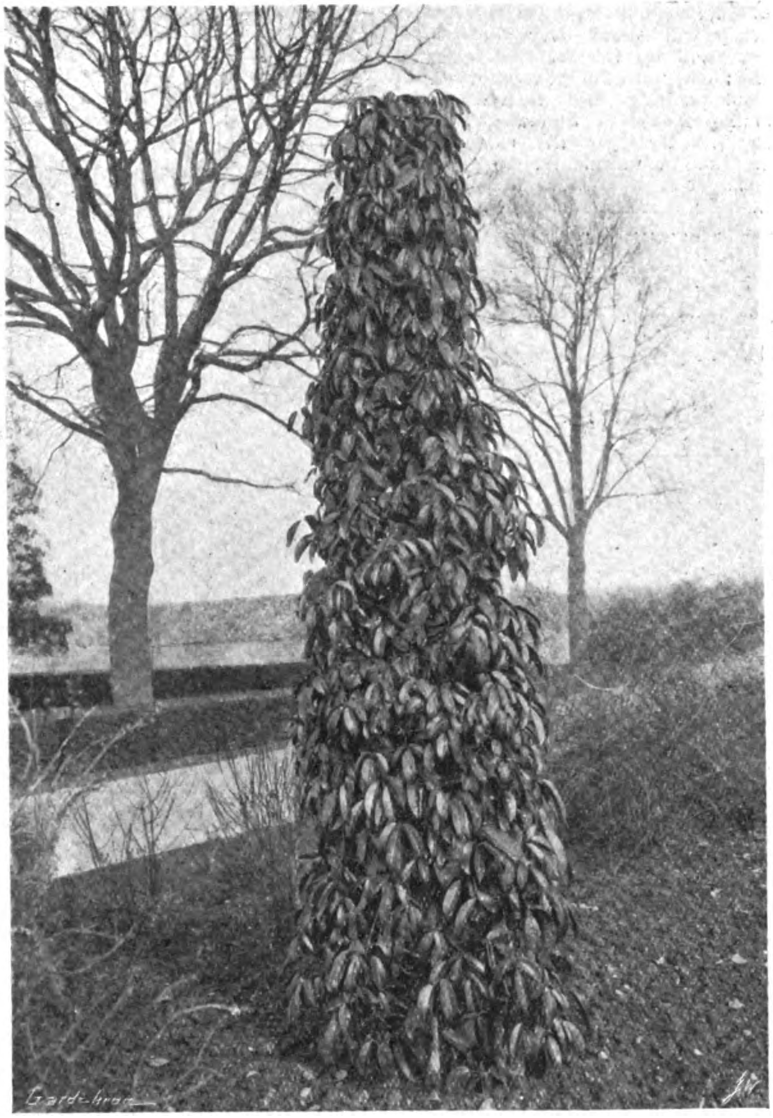

FIG. 175.—HOLBOELLIA CORIACEA (WILSON 146).
(see p. 389).

Kitchen Garden.—Regular sowings of salads should be made out-of-doors every ten days or a fortnight. The earliest Celery may now be placed in trenches and watered copiously when planted. A sowing of Turnip may be made to maintain a succession of medium-sized roots suitable for the kitchen. There is yet time to make three or four small sowings of the smaller-growing varieties. A sowing of Savoys may now be made, and where space is limited the varieties Early Gem. and Green Curled are to be recommended; both are very compact in habit and become ready for use early. Vegetable Marrows may now be planted out in frames or on hot-beds, but they should have protection at nights from frost in late districts until the second week in June.

IRIS GARDEN.

REGELIO-CYCLUS HYBRIDS.

Iris lovers who have not already obtained these beautiful hybrids, would do well to add a few to their collection. A warm border is the best place to grow them in, as they are not so hardy as the Flag or Bearded Irises. As they start into growth early some protection against frost is necessary. A covering of old ashes should be applied in late autumn; this will also serve as a protection against slugs, which attack plants even on the driest border.

The varieties Isis and Psyche, both of which have been granted Awards of Merit by the Royal Horticultural Society, produce lovely flowers. The former produces a dark ruby effect, and the latter has a greyish-white ground, and is richly veined with violet. Charon has been awarded a First-Class Certificate.

We grow these hybrids near the foot of a south wall in front of Iris unguicularis and I. reticulata. They do not make vigorous growth, but the flowers are large and showy, and appear a few weeks before those of the Germanica type. Irises are amongst the most glorious of all border flowers in spring and early summer and these Regelio-Cyclus hybrids are not excelled by any of the family. *Charles Hodgson, Acton Place Gardens, Sudbury, Suffolk.*

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

LYCHNIS COELI-ROSA.

The Rose of Heaven, as this plant is popularly known, is often misnamed Viscaria oculata. There are several beautiful varieties ranging in colour from white and rose to brilliant crimson. They are slender, graceful plants and very charming for pot culture. Seeds are best sown about the middle of September in a cold frame or in a cool greenhouse, or if so desired they may be sown during January or February.

Four or five seedlings should be pricked off in a sixty-sized pot, in which receptacle they will stand over the winter, keeping them well up to the roof glass in a cool house; early in the year they should be ready for shifting into their flowering pots, those five inches in diameter being a suitable size. As their growth is very thin and slender the plants should be carefully and neatly supported with slender twigs of Hazel or similar material.

TAGETES PATULA VAR. NANA.

The dwarf Marigolds are very useful for summer bedding and there is no reason why they should not be more commonly used for greenhouse decoration during the autumn, as they flower freely for many weeks.

The double-flowered varieties are best for this purpose; they should be planted out in the nursery garden during the summer, where they will make compact little bushes. About the middle of September the double-flowered plants should be lifted and placed in suitable-sized pots; if stood in a cold frame and kept close and shaded for a few days they will soon become re-established. For this purpose May is soon enough to sow the seeds, pricking off the seedlings when large enough to handle and planting them out in the usual manner when hardened off.

The African Marigolds are also excellent for pot work when treated in the same way, as also are the ordinary French Marigolds. The latter, however, are usually rather large by the end of the season and are not so easy to handle. It is not, however, generally known that they are easily rooted from cuttings which should be selected from good striped varieties about the middle of August. Shoots four or five inches in length root readily in a close case in a cool house, and good, bushy specimens may be obtained quickly by placing three cuttings in large sixty-sized pots, afterwards potting them on. By growing them in perfectly cool conditions I have obtained excellent results by this method of cultivation.

TRACHELIUM CAERULEUM.

Although generally regarded as a biennial this plant may be treated as an annual, for if sown during February or March, good specimens suitable for the plant stages may be obtained the same season. If large plants are desired, seeds should be sown in a cool greenhouse towards the end of June, and if the resulting plants are grown steadily in a cool house, potted on as they require it until they are in ten-inch pots, they will furnish fine, large specimens three to four feet in height. With their light, elegant, cloud-like mass of small bluish-purple flowers such plants are very useful for conservatory decoration; there is also a white-flowered variety. This Trachelium grows freely in any good potting compost, and never seems to suffer from disease or insect attacks.

TROPAEOLUM LOBBIANUM AND T. MAJUS.

The type species and their many varieties of these two Nasturtiums are all tall, climbing plants, and very useful for furnishing the roof-rafters in the conservatory, especially where they can be freely exposed to light and sun.

They are very useful for winter and spring flowering, especially in the country, where there is plenty of winter light; in the immediate neighbourhood of London and large manufacturing towns, where light in winter is poor, it is useless to try and grow them during the winter. Where they can be grown their flowers are very useful for table decorations in the dull months. They are easily raised from seeds which may be sown in a cool house, any time from March to the end of June.

The dwarf varieties of T. majus, known as nanum, include many varieties with a wide range of colours; there are also varieties with variegated foliage, others with golden and some very dark leaves.

They all make excellent pot plants, but they need to be grown in perfectly cool conditions and kept freely exposed to all the light and sun possible. To induce freedom of flowering they should be grown in rather poor soil. Like the climbing varieties the seeds of these Nasturtiums may be sown in a cool house from March to June.

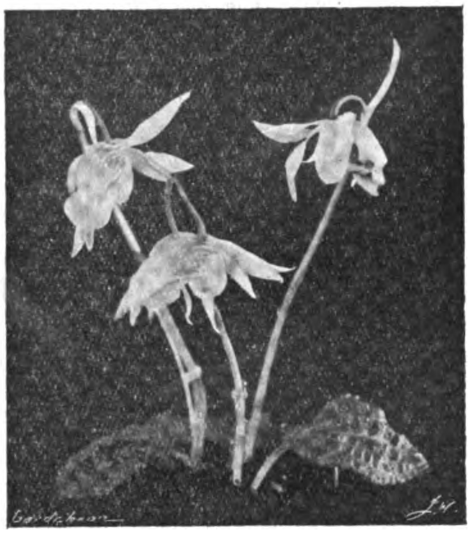

FIG. 176.—CALYPSO BOREALIS (*syn.* C. BULBOSA) VAR. JAPONICA.
(see p. 393).

If desired, any variety may be propagated by means of cuttings.

TROPAEOLUM PEREGRINUM.

This popular climbing annual known as the Canary Creeper, although generally planted out-of-doors during the summer is equally useful for furnishing wires or rafters in the cool greenhouse during the summer. Plants are easily raised from seeds sown in a cool house during March.

VENIDIUM CALENDULACEUM.

This plant has bright orange-coloured flowers and is worth growing in pots, treating it on the same lines as advised for Calendula officinalis, which it somewhat resembles.

VERBENA.

The many beautiful varieties of Verbena are very useful for pot work; although really perennials they may be treated as annuals.

Seeds may usually be purchased in varieties of separate colours and generally they may be depended on to come fairly true to name. The seeds are best sown in an intermediate house during February or March and when fit to handle the seedlings should be pricked off into boxes. When large enough they should be placed in sixty-sized pots and when well rooted shifted again into six-inch pots, in which they should be flowered.

As the plants are naturally of a spreading habit they should be pinched several times in their younger stages to promote a bushy habit. The flowering stems should be kept tied to slender stakes.

These plants will grow freely in any good potting compost and should be grown under perfectly cool conditions. Under glass they are somewhat subject to attacks of white fly and red spider, which must be guarded against.

If it is desired to retain the stock of any particular variety, it may be propagated by means of cutting. *J. Coutts.*

INDOOR PLANTS.

ACHIMENES.

Amongst stove plants suitable for growing in quantities for decorative purposes during the summer season, the Achimenes deservedly occupy a high place and should have ungrudgingly the attention necessary to bring them to high perfection.

Whether in pots or baskets, they should be grown in the cooler end of the stove house, until they are coming into flower and be then removed to the conservatory, as they appear to greater advantage and remain in good condition a longer period than when subjected throughout to the heat of the stove.

Achimenes require a rather light and decidedly rich compost; a mixture which suits them admirably may be made up as follows: four parts good, fibrous loam, one-part well-rotted manure, one part good Oak leaf-mould, and a generous sprinkling of sharp sand. In starting the plants into growth it is a good plan to fill shallow pans with a light, sandy compost and then shake the corms out of the old soil, place them rather closely together on the surface and cover them with about half-an-inch of soil. Grow them in a house having a temperature of 65° to 70°, and when they are about two inches high, put them into the receptacles in which they are to flower. The pots should be well drained and filled moderately firmly with the prepared compost. Lift the plants carefully and put them from two to three inches apart over the pot.

There is no way in which the Achimenes appear to greater advantage than when grown in rather small baskets and suspended in the conservatory. If the shoots of those plants growing around the edge of the basket are carefully tied down as they develop, the sides of the basket will be completely covered by the time the flowers are produced.

Achimenes require a temperature similar to that in which they were started, a moderate degree of atmospheric moisture and fairly liberal supplies of water at the roots. A position not too far from the roof-glass, where they can enjoy a moderate circulation of air and be shaded from brilliant sunshine will suit them well. They should not be grown entirely without exposure to light and sun, however, for when kept constantly shaded they become drawn and weakly, losing their charm and beauty. *W. Auton.*

THE ROSE GARDEN.

ROSE SENATOR.

This new Rose has been approved for registration by the Registration Committee of the American Rose Society. It is stated to be similar in form and colour to Hadley, but produces four times as many blooms. It was raised from Red Columbia × Premier. The new variety is said to be very vigorous and free in growth.

ORCHID NOTES AND GLEANINGS.

CALYPSO BOREALIS AND PLEIONE FORMOSANA IN JAPAN.

I am sending you two photographs taken in our Botanic Gardens, Tokyo. One is of Calypso borealis (*syn.* C. bulbosa, Reich. f.) var. japonica, Makino (*syn.* C. japonica, Maxim); the Japanese name is Hotei-ran, which means "Ventricose Orchid." This (Fig. 176) is a very rare and beautiful Orchid, but no one seems to succeed with its cultivation in Japan. Nearly every grower contends that it is nearly impossible to grow this species because the snails and slugs spoil the young bud and the tubers decay a few months after they are gathered. No one knows the reason for this failure. Some growers find the plant grows a second year, but it does not flower, and soon afterwards dies away. The specimen figured was exhibited in the Alpine Plant Show last year at the Botanic Garden, Tokyo. It was collected by Mr. Oka, the famous Japanese painter, at Yatsugatake, in 1924.

The second photograph (Fig. 177) represents Pleione formosana, Hayata (syn. C. Pricei). I collected it in Arisan, Formosa, in 1924, and it flowered in our greenhouse on March 4 of the same year. There is a description of the plant in the *Botanical Magazine*, 1914, t. 8729, under the name of P. Pricei, Rolfe, but I believe this is the same as P. formosana: "*Orch Rev.* 1916, t. 126 (nomen); species nova. a P. formosana, Hayata, caule breviori unifloro, bracteis brevioribus et labelli disco bilamellato differt."

I received many plants from Formosa this year and attempted to discover the difference between the two. Dr. Hayata states "pauciflorati," but it is a very rare form. Nearly all of them are one-flowered, at least, as I know them from our dried specimens as well as living ones. Some have two, others three, and some four lamellae on the lip disc; one had five. It seems to me that P. Pricei and P. formosana are not distinct. *N. Makuzaki, Chief Gardener, University Botanic Gardens, Tokyo.*

ODONTIODA CORA VAR. PRINCESS AND O. HIAWATHA VAR. ROYALTY.

These two magnificent Odontiodas, which were included in Messrs. Charlesworth and Co.'s fine group at Chelsea, are not only two of the largest and most beautiful varieties, but from the accurate recording of the firm afford interesting material for observing the effect of reverse parentage.

The specimen of Odontioda Cora. var. Princess (Oda. Coronation × Odm. eximium) bore a heavy spike of nineteen large and perfectly-formed flowers, the colour arranged as in Oda. Coronation, which was the seed parent. The outer parts of the sepals and petals are light rosy-mauve and the inner white blotched with ruby-purple, the arrangement of the blotching clearly indicating Oda. Coronation (see *Gard. Gard.*, May 23, p. 354).

Odontioda Hiawatha var. Royalty (Oda. Charlesworthii × Oda. Coronation) of which the scarlet Oda. Charlesworthii was the seed parent, quite obscures the colour-pattern of C. Coronation and follows mainly the seed parent, the sepals and petals being wholly ruby-crimson with a blush white margin and white front to the lip. The fine specimen bore twelve flowers. Messrs. Charlesworth's form of Oda. Coronation is undoubtedly the most potent factor in the production of handsome Odontiodas, the finest forms of it having been used in their various crosses.

LAELIO-CATTLEYA DAINTY MAID.

The first flower of a pretty hybrid between L.-C. Mercia (C. Schröderae × L. flava) and L.-C. Goldcrest (C. Schröderae × L. Cowanii) is sent by C. J. Lucas, Esq., Warnham Court, Horsham. The sepals and petals are silver-white, and in their outline show much of Cattleya Schröderae, which is in the pedigree of both of the parents. The long, much-crumpled white lip with a yellow disc is influenced by the Laelia parents, both of which, being of the many-flowered L. cinnabarina class, will probably result in the new hybrid bearing several flowers on the spike, when mature.

LYCASTE LOCUSTA.

This rare species was a noteworthy feature in Sir Jeremiah Colman's group at Chelsea Show.

L. Locusta is a remarkable Peruvian species with flowers of thick substance and uniformly green in colour with a whitish fringe at the front of the lip. Its remarkable dissimilarity from other flowers in form and colour attracted much attention. It was first described by Reichenbach in *The Gardeners' Chronicle*, 1879, p. 524, in his characteristic manner and illustrated in *Bot. Mag.* t. 8020. The species has always been rare in gardens.

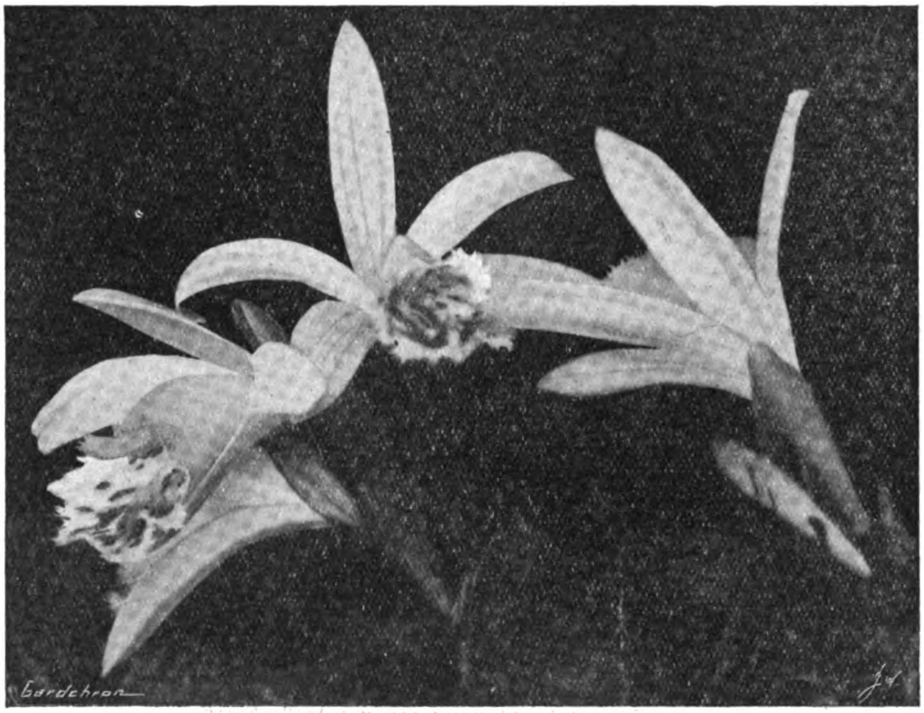

FIG. 177.—PLEIONE FORMOSANA, HAYATA.
(*syn.* P. Pricei, Rolfe.).

VANDA PARVIFLORA.

This rare species was one of the most attractive members of the group, rich in botanical species, shown by Sir Jeremiah Colman, Bt., at Chelsea show. It is not classed with the showy species, but was well described by its owner as "a gem in the genus Vanda."

The compact plant bore an erect spike of numerous pretty flowers, each about one inch across. The sepals and petals are obovate-spathulate and uniform straw-yellow in colour; the three-lobed lip has the front lobe expanded, the side lobes small and incurved, white with violet markings.

Although V. parviflora has the widest range of habitat of any of the Vandas, being found in the Himalayas, Assam, Burma, Ceylon, Java, and other parts, it has rarely appeared in our gardens except as occasional plants in importations of the showier species. As evidence that this pretty species was better appreciated formerly than now, the Royal Horticultural Society's First-Class Certificate was awarded to V. parviflora on June 19, 1866.

ONCIDIUM INSCULPTUM.

This very singular species appeared in the group of Orchids shown by H. T. Pitt, Esq., at Chelsea show. It has trailing spikes several feet in length and bearing short, lateral, few-flowered sprays at the extreme half. The flowers, which are about one-and-a-half inch across, are hard in texture; the sepals and petals are light sepia-brown with a metallic lustre and with a narrow, light yellow margin. The lip is the most remarkable in the section; the front lobe is oblong with the apex reflexed and having two curved auricles at the base beneath the column. The crest is prominent and yellow in colour, while the blade of the lip has numerous warts. Its habit is similar to O. macranthum and others of the class, but its flowers are not showy, although they compensate for that by their remarkable structure. The species is a native of Ecuador.

ORCHIS FOLIOSA.

I was interested in the note by *J.* on Orchis foliosa in *Gard. Chron.*, April 18, p. 267. There are several thousands of this Orchis here, and I fully endorse the writer's notes that the plant is absolutely hardy, as I have had it lying on the surface of the ground all the winter without its suffering any harm, while specimens planted in a bed have withstood more than 32° of frost. Nor do I think it is fastidious as to soil and situation. It is growing in a swampy bog with me, in exuberant health, and also blooms freely in poor, sandy, hot soil, though, needless to state, the growth is not nearly so luxuriant. It has another merit, in being fairly free from garden pests, though on one occasion a small, white insect did attack the roots whilst they were dormant, with disastrous effect. It is a pity this terrestrial Orchid is not more frequently seen, but I am afraid the word Orchis conveys a feeling of tenderness, nor does the word Madeira help matters much, hence its absence from many gardens. *Formakin, Renfrewshire.*

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.

X.—POPPIES.

IN my last article, I was writing of alpine Poppies. The next to flower after M. simplicifolia, in early June, were two yellow-flowered species of the Polychaetia section. These I cannot place—neither of them is M. integrifolia or M. pseudointegrifolia, nor M. paniculata, nor M. robusta; indeed, the "Ivory Poppy," as we called it (K.W. 5766), is more like a white-flowered M. simplicifolia, with solitary flowers on basal scapes, than any other yellow-flowered species known to me. It is a lovely plant. The flowers are some four inches in diameter, of a pure ivory white with orange anthers, and are delightfully fragrant, which the sulphur-yellow species is not. The two grow in company, but the Ivory Poppy is very rare—a plant here and a plant there. I do not think we found six specimens altogether; and we marked every one.

The sulphur Poppy is common on every range, except on the Himalaya itself. It is of the M. integrifolia type—that is to say, with a central stem ending in a flower, and axillary flowers on simple pedicels, longer or shorter; these, however, eventually all appear to spring from the same point. The plant grows some thirty inches high, bearing as many as a dozen flowers, each five inches in diameter; it may well be imagined, therefore, that a clump of these sulphur Poppies is a fine sight. They grow up amongst the dwarf Rhododendron in favoured nooks and hollows on the open moorland, persisting through the pitiless July rain. The flowers have six or seven petals and orange anthers, and the long style, as indeed the habit, recalls M. pseudointegrifolia; even the stigma is not unlike. The capsule is, in other respects, however, quite different to that of M. pseudointegrifolia, being much larger, and opening by twice as many valves. I may remark here that this yellow Poppy is evidently not the same as the one of which fruit was collected while crossing a snow bound pass in April, as recorded in article VI, September 27, 1924; indeed, there is no direct evidence that that plant is yellow flowered; though it seems probable enough. In any case, it is too far away for us to collect seed of it—unless, indeed, it turns up in our district.

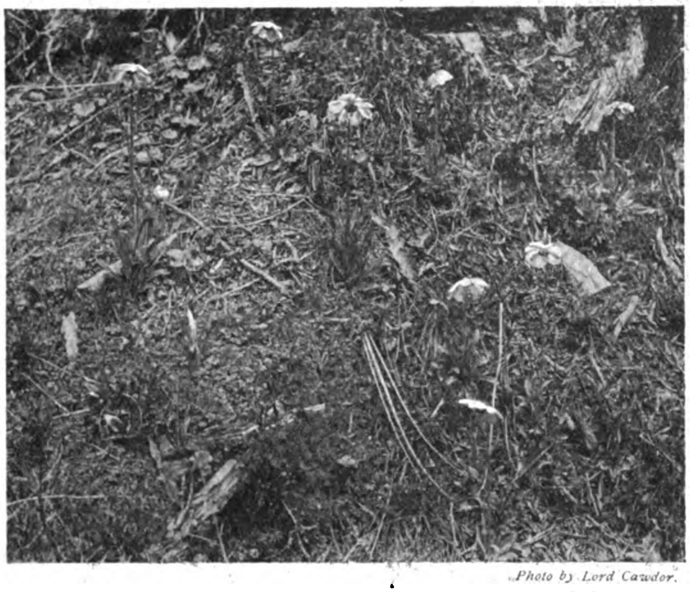

Photo by Lord Cawdor.

FIG. 178.—MECONOPSIS SIMPLICIFOLIA (K.W. 5737).

Early in July, I found on the cliffs, at a high elevation—about 16,000 feet—a third yellow-flowered species, though it was not yet in bloom. Nor could I discover any fruit. Dissection showed that, at any rate, it was not our June-flowering sulphur Poppy (K.W. 5749); it seemed to bear to that species somewhat the relationship that M. integrifolia var. Souliei (or more conveniently as I think, M. Souliei) bears to M. integrifolia. It is just possible that this high alpine is identical with the one found in April. Both come from much the same situation—screes and cliffs; round about 16,000 feet; and though in April we were traversing mountain ranges with a much drier climate than the country in which we now find ourselves, still the Poppies are short-lived, summer flowers, and it is probable that even so far west as that, the summer rainfall is sufficiently heavy to bear comparison with our own. At any rate, the pass was under deep snow.

It will be remembered that when crossing that pass—the name I forget—we found two species of Meconopsis in fruit, the second being a dwarf, prickly "Primulina."* We have seen nothing like it in this region. There are, it is true, two "Primulinas" in our locality (of which more news immediately); but neither of them is the dwarf plant referred to. Thus we know of at least nine species of Meconopsis in this region.

While finding these Poppies in flower at the beginning of June, we were by no means ignorant of others due to flower later; I had found fruits of two species, referred to the "Primulina" group, and a third, larger plant of the M. Prattii type—anyhow, one of the "Aculeatae." The two former flowered first, at the end of June; the latter not till the beginning of July.

K.W. 5808 flowered first. It is a dwarf plant of six to eight inches, bearing an astonishing number—sometimes fifteen or eighteen—of basal, one-flowered scapes; but it is rare to see more than three or four flowers open at the same time. It has six (sometimes seven) petals, deep violet or navy blue, with the sheen of satin; anthers orange, fading to cream, filaments violet; style dark violet, almost black; and stigma cream. The fruit is cylindric, long and narrow, opening by four small valves at the apex. In some respects this species comes nearer M. lancifolia, though it never, so far as my experience goes, bears a central scape, and there are far more flowers than in any variety of M. lancifolia with which I am acquainted; in this respect it comes nearer to M. concinna. It is common in the alpine region, nestling down amongst the dwarf Rhododendron, generally scattered. The fountain of nodding flowers which it throws up would look well in the rock garden, but its biennial character will militate against its popularity. Opening its first blooms at the end of June, it flowers throughout July.

This dark-flowered species was closely followed by another dwarf with sky blue flowers, from the same area, but affecting harsher ground, screes, and earth slopes, generally above 15,000 feet altitude. Yet one might often see the two growing closely together, with the sulphur Poppy and M. simplicifolia scattered over the background. This sky-blue "Primulina" (K.W. 5751), or it may be "Bella," always has a central stem, and the flowers on simple pedicels, which are not quite basal—or not all of them—but form a sort of basal raceme. The plant itself does not exceed twelve inches in height, but has an enormously long tap root, sometimes three times as long as the stem, which when cut exudes from the cortex a Banana-coloured juice or latex, like a real Poppy. There are four petals, translucent as Japanese silk, bright yellow anthers with sky-blue filaments, and pale green style. The prickles which clothe the stem and leaves are purple at the base. I have no doubt that this is the plant described by Sir David Prain provisionally under Meconopsis impedita as M. impedita var. Morsheadii. Sir David Prain's specimen was imperfect. I have no specimen of M. impedita with me for purposes of comparison, and my recollection of that species is hazy; but there can be no doubt of their close relationship. There is one point, however, in which our Tibetan plant differs markedly from M. impedita. It is extremely fragrant; M. impedita—unless my memory is badly at fault—is not. Thus it is a really good, little plant, fragrant, of first-rate colour, and very flowerful, bearing sometimes as many as fifteen scapes, with six or eight flowers open at the same time; but, again, it has the usual disadvantage of being biennial, and people will not take the trouble to keep on raising it from seed. Like so many of the genus, it probably looks far better in its native haunts, wet with the stinging rain, and battered by the wind, against the stony mountain background, than it will ever do in the garden. I have never seen any tendency towards purple in its flowers—they are invariably a brilliant sky-blue; but it flourishes 15,000 feet nearer heaven than most of our gardens, and it may well change countenance when we bring it down to earth—as M. Prattii does.

The last of this trio to bloom was K.W. 5909, a tall, obvious Aculeate, also with sky-blue flowers but paler than the last; four petals, orange anthers, violet filaments, and green style. It is not unlike M. Prattii in general appearance—a plant of twenty-four inches to thirty inches, with pale blue flowers borne on simple pedicels in the axils of leaves on a central stem. But it flowers a month later. It grows on the boulder screes above 15,000 feet, not opening its topmost flower till the first week of July. Associated with it may often be seen the sulphur Poppy, the Ivory Poppy, and M. simplicifolia, all in flower at the same time. Indeed, on one range are to be seen five, possibly six, species of Poppy flowering together! Where else in the world can such a sight be seen!

On the Himalaya, Poppies were few and far between—there was not room for them, so thickly do Rhododendrons grow there. The woodland blue Poppy grew by itself in the forests below. In the alpine region we saw only two species. One of these was M. simplicifolia, or a variety of it (Fig. 178). The other

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The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, September 27, November 1, 1924, April 4, and May 9, 1925.

* Or possibly M. horridula var. typica.

was nowhere near flowering at the end of June—it might have been the dwarf sky-blue, or the Aculeate sky-blue, or neither of them. That is the tale of our Poppies so far; the third yellow species had not flowered when we returned from camp at the end of the first week in July. At present it is raining like the second deluge—has been for a fortnight; but we shall presently move out into camp again, and probably find more Poppies yet.

The third yellow Poppy, or, at any rate, *a* third yellow Poppy, was in flower at the end of July, on the Himalayan range itself. We moved out of our base on July 17 in very wet weather, crossed the encircling wall of mountains by a new pass, and descended to the Tsangpo, only to find we could not cross it without travelling a day's journey either up or down stream. We elected to go down stream and at the same time reconnoître the entrance to the gorge. Of that, more anon. It took us an entire day to cross the river by a very primitive rope bridge; we then had to march back a long day's journey to the village at the foot of the pass selected; and from there another two day's to reach a camping ground at an altitude of about 14,000 feet. Thus, at our second attempt, we were employed for a full week reaching the Himalaya, a journey which in June had only occupied three days.

On our first day in camp we climbed to the pass, crossing one glacier and several big moraines, and finding the path itself occupied by a glacier—or rather by a snow-field which gives rise to a glacier. Strictly speaking the pass was not open (this was on July 24), but by floundering knee-deep through soft snow up a very steep face we managed to reach the summit, which is over 16,000 feet. It was on the moraines just below the pass that I found the third yellow Poppy, with rather pallid, almost cream-coloured flowers, slightly fragrant, and one unique character—one which I have never seen in any other species of Meconopsis. In habit the plant, which is about ten inches high, recalls M. Souliei; the stem ends in a flower, and bears three or four lower flowers on simple axillary pedicels, longer or shorter. The buds are very long and narrow, not globular, or even ovoid, but narrow-ovoid. There are six or eight pale creamy yellow petals; the filaments are of the same colour, and the anthers orange. There is no perceptible style—the six-rayed stigma is truly sessile. The unique character of the flower lies in the stigma, which opens out, exposing a hollow cup in the centre, which apparently is the receptive portion. The flower in fact is protandrous, the stigma opening after the anthers have ripened.

This species (K.W. 5984) is at least as rare as the "Ivory Poppy," occurring only on the highest cliffs and moraines, widely scattered. I hope, however, to secure a little seed of it, as it is a plant of considerable botanical interest, apart from its horticultural merit, which is neither more nor less than that of the majority of its kind.

Curiously enough, we have found neither of the other yellow-flowered species on the Himalayan range itself, though I do not say they do not occur there. We have found there a form of M. simplicifolia, the navy blue "Primulina," and the pale blue "Aculeate." The dwarf, sky-blue "Primulina" also seems to be absent, its place being taken by another dwarf, prickly species apparently—though, as this last has not flowered yet, it is difficult to be sure what it is. I have a suspicion, however, which a comparison of the capsules swells to something like certainty, that this last is none other than the dwarf species which we collected in fruit on the high, snow-bound Lung-La in April, much further west, and on the north side of the river. The resemblance in the fruits is at any rate striking. It can hardly be K.W. 5751 or it would be in flower before the end of July, and it does not look like flowering before the end of August. *F. Kingdon Ward.*

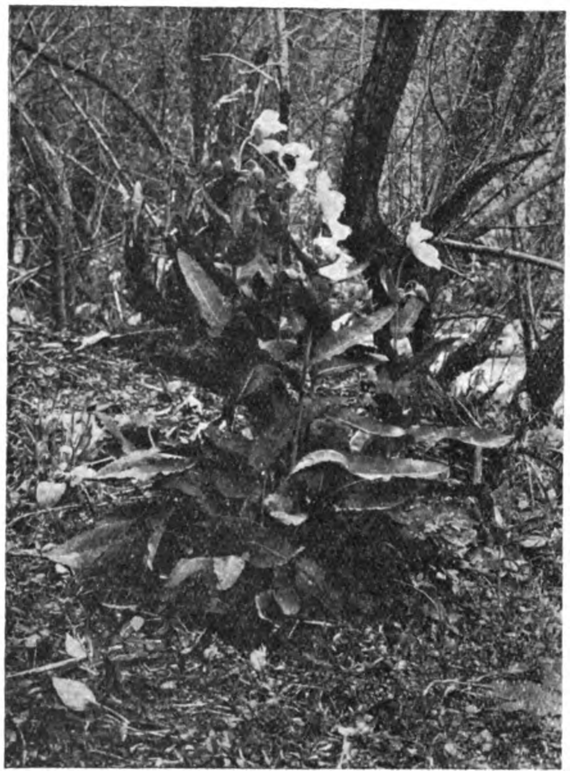

FIG. 179.—PERENNIAL MECONOPSIS (K.W. 5784) GROWING IN WOODS.

NOTES FROM WISLEY.

It would be hard to find a more beautiful piece of woodland garden than the Wisley wild garden at the present time. Masses of brilliant Azaleas and Rhododendrons are blooming under the Oaks and Birches, and the ground is thickly carpeted with multi-coloured Primulas, while the surrounding fields are ablaze with Golden Broom. The brilliant effect is in striking contrast to that which obtained a month or two ago, when this part of the gardens was water-logged and everything dank and dismal.

Bright colours abound also in the rock garden, where Cheiranthus Allionii and Lithospermum prostratum are conspicuous. Bright blue patches of the latter are to be seen in the grass leading dowh to the rock garden ponds, and although the position may not be altogether agreeable to the plant the effect is very charming. The sides of the new bridge over one of these ponds are now quite hidden by the long, hanging inflorescences of the Wistaria sinensis, which draped the old bridge, and appeared as pretty as the Wistaria in the views of Japanese gardens. On the pond banks the umbrella-like leaves of Saxifraga peltata are rapidly taking the place of the pink flowers. In the adjoining borders the spring bulbs are nearly over, and a large crop of the giant Quaking Grass, Briza maxima, has sprung up, which in time will hide the fading foliage of the bulbs.

Many beautiful shrubs are now in flower on the rock garden, such as the creeping Genista tinctoria humifusa. Another shrub of the same order and suitable for the rock garden is Cytisus sericeus. Near the top waterfall plants of Cotoneaster horizontalis, which not so long ago were still carrying their fruits, are now studded with little pink flower buds, and although very few flowers are actually open large numbers of hive bees are attracted to the shrubs. The sickly and pungent odour of the neighbouring flowers of Berberis Lycium attracts small flies.

Round about a pretty little variegated Goat Willow (Salix caprea tricolor variegata), the young shoots of which are tinged with pink, is a good patch of Gentiana verna, a fine single plant of Thymus nitidus, nearly a foot high and as much in circumference, and some of the Lilac-flowered, creeping Mazus rugosus, which, although often listed as an annual, has survived on the Wisley rock garden for two or three years.

On the new rock wall in front of the laboratory the most striking plant is an orange-flowered Geum, which is thought to be a hybrid between G. Heldreichii and the Water Avens, G. rivale.

In the alpine house plants of the new Primula fasciculata, which is in bloom, are much stronger than last year. Some of them bear so many as twenty pink flowers, which spring from a rosette of smooth, spoon-like leaves to a height of five inches to six inches, as compared with two inches to three inches last year. A nearly allied Primula is P. tibetica, which, unlike P. fasciculata, bears a number of flowers on top of a single stem. Other less uncommon Primulas in flower are P. Veitchii and P. Sieboldii. Another attractive plant in flower in this house is Hieracium Lima (?). The yellow flowers, of which there are from three to four on a stem, are composed of ray florets, which are sharply serrated and cut very squarely. The leaves are covered with silken hairs and are purple on the under surface.

Among the Androsaces is a hybrid, Salmon's ×., the flowers of which almost rival in colour those of A. Chumbyii, and are considerably larger. It is now sending out long, crimson runners. The double form of Saxifraga granulata is also in bloom. The flowers are so large and numerous that the stem cannot properly support them. Suffrutescent subjects growing in the alpine house include the beautiful silvery foliaged Convolvulus Cneorum with white flowers, which is exceptionally good this year.

Bearded Irises, of which there is a very fine collection, are now flowering at Wisley, and quite a good show of flowers is to be seen on the students' plots. *J. E. G. White.*

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ACANTHOSABAL.

IN *The Gardeners' Chronicle* for February 7, 1925, Dr. Proschowsky proposes (page 91) the genus Acanthosabal for a Palm sent from Porto Alegre, southern Brazil, naming the species A. caespitosa. The genus is particularly marked by two characters, "caespititiousness and armed petioles." There is a similar and perhaps identical Palm growing in the Botanic Garden at Georgetown, Demerara (British Guiana), where it is known as Serenoa, sent from Kew, which suggests an interesting history. A photograph of the Demerara plant (Fig. 181) should be compared with that of the Porto Alegre Palm (Fig. 35 in Dr. Proschowsky's interesting article); and the petiole (Fig. 180), drawn from one of my Demerara specimens, is much like that shown in his Fig. 37. The attractive clump in Demerara was probably grown from seeds collected in southern Florida and distributed by Dr. Sargent as an undescribed species; if so, it is the plant later described by him as Serenoa arborescens (*Bot. Gaz.* xxvii., 90, 1899). This plant is now placed in the genus Acoelorraphe, H. Wendl. (*Paurotis*). Probably it has become widely distributed. The Acanthosabal of Porto Alegre is presumably a cultivated plant, although no statement is made to that effect.

The two striking marks of Acanthosabal—cespitose habit and armed petioles—are also features in Acoelorraphe; and the other parts of the description appear to be so comformable to the genus of Wendland as to raise the question, even in the absence of technical diagnoses of flowers and seeds, of the identity of the two genera.

The genus Acoelorraphe originates in Wendland's account of Sabal-like palms in *Botanische Zeitung*, xxxvii, 148 (1879), where it is characterised only in a key to the genera of the group, and without the naming of a species. The genus lay without recognition until taken up by Beccari in *Webbia*, ii., 107 (1907), where it is fully characterized, and two species described, the genus being verified from Wendland's herbarium: "*Sino a qui il genere Acoelorrhaphe era solo stato indicato di nome ed applicato negli erbari da H. Wendland alla Copernicia Wrightii Gris. et Wendl.* (*Wright, Pl. Cub. no.* 3217)."

In 1902 O. F. Cook founded the genus Paurotis in *Mem. Torr. Bot. Club*, xii., 21, for a Palm collected on Andros Island, Bahamas, naming it P. androsana. This plant Britton considers, in *Torreya*, viii., 239 (1908), to be the old Copernicia Wrightii, and he makes it Paurotis Wrightii, and it so stands in his writings, as in *North American Trees*, 141, 1908 (where the combination apparently is made), and in Britton and Millspaugh *The Bahama Flora*, 60, (1920), the generic name Paurotis being accepted in place of the older Acoelorraphe, which is eliminated because it is published without a type, and is therefore a hyponym.

Even though published without a type, the genus of Wendland is by no means a *nomen nudem*. Wendland said a description was to follow, and apparently he never published the diagnosis; but the key gives sufficient characters to lead Beccari to take up the name in *Webbia*, as noted above, and to re-affirm it as against Paurotis in "The Palms Indigenous to Cuba" in *Pomona Coll. Journ. Econ. Bot.* iii., 391 (1913); a similar course is taken by Sargent in *Trees and Shrubs*, ii., 117 (1911), a position he maintains in the current edition of his *Manual of the Trees of North America*, 105 (1922); the name is accepted by Dalla Torre and Harms, *Genera Siphonogamarum*, 37 (1900).

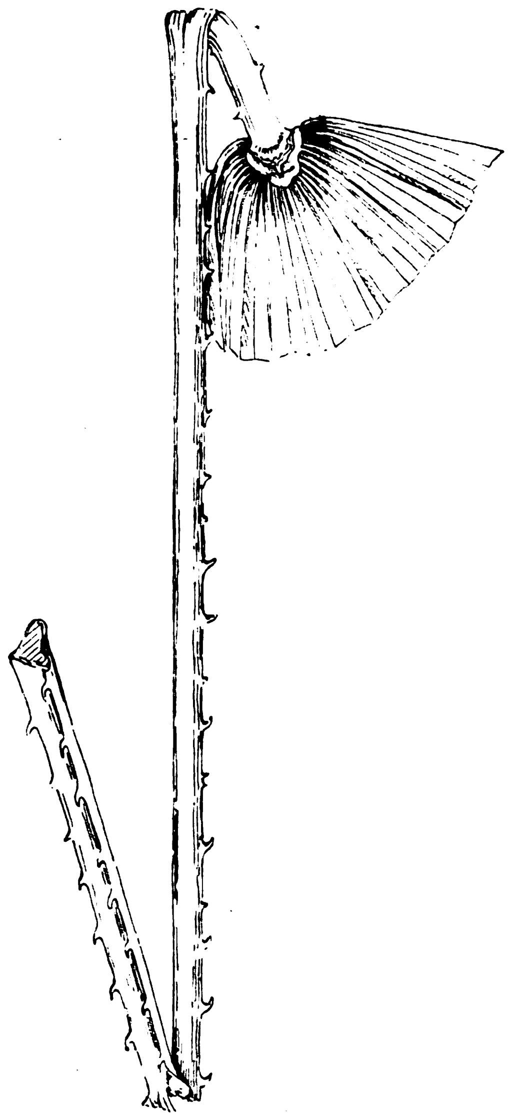

FIG. 180.—ARMED PETIOLE OF ACOELORRAPHE.

From Wendland's key we learn that Acoelorraphe is Sabal-like and has armed petioles; Beccari considers it "is sufficiently well defined by the peculiarities of the leaves"; it is bracketed between Brahea and Copernicia, being keyed from both; the name Acoelorraphe is compounded of Greek words to indicate the placement of the raphe, thus distinguishing an important seed structure. While this characterization is, of course, not satisfactory, it is, nevertheless, very difficult to disregard a name with this much standing, particularly when there is no doubt as to its application. In the orthography of the name, on which there is divergent practice, I prefer to follow Wendland.

The two species of Acoelorraphe recognised by Beccari are A. Wrightii, apparently so named by Wendland in herbarium, native in Cuba; and A. arborescens, Becc. (Serenoa arborescens, Sarg.), native in southern Florida. Subsequently ("The Palms Indigenous to Cuba") he expressed doubt whether the two are distinct. Sargent, however, still holds the species as two (*Manual*) and credits them both to Florida. Britton accepts only one species. Small, who has had exceptional opportunities to study these Palms, regards them as a single species, in Florida, Bahamas, and Cuba, which he prefers to call Paurotis Wrightii (*Journ. N.Y. Bot. Gard.* xxiii, 61-70, 1922).

In extreme southern Florida, the native Acoelorraphe is a striking plant growing in large clumps, sending up slender, straight stems. This Palm is eminently worthy of cultivation in regions where it will thrive. It will be interesting now to have further information as to the relation of the plant from Southern Brazil and what its history may have been. *L. H. Bailey, Ithaca, N.Y.*

MODERN ITALIAN HORTICULTURE.

DURING the early spring of this year I paid a visit to Italy, with the special object of studying the natural history, agriculture, and horticulture of that delightful land. My itinerary included Turin, Genoa, Leghorn, and Rome on the outward journey; Florence, Bologna, Padua, Venice, Verona, and Milan being among the more important places visited on my return. Very copious notes were made in every place, the record being carefully transcribed from day to day while the facts were still fresh and clear, and from these memoranda I cull a few of the most noteworthy.

Perhaps the thing which struck me most was the contrast between the cottage gardens of Southern England and those of Italy, especially in relation to the culture of flowers. This fact, that the Italian peasant is almost indifferent to the flower-bed, must have struck others as well as myself, for I heard the remark made by one who was not aware of my special pursuit, that the flower-border meant nothing to the cottager. In places, the plot of ground near the cottage is cultivated with some care for the sake of salads or easily-grown vegetables; but to see these in perfection one must not look at the peasant's holding. Very brilliant and tastefully-arranged borders for flowers may be seen in the public gardens of such towns as Milan, Florence, or Rome, where Cinerarias, Calceolarias, Violas, Pelargoniums, and other well-known plants flourish abundantly. Here also magnificent Magnolia trees, as high as the Planes and Elms, flourish; Palms are vigorous, the Oleander is constantly in evidence, the Oriental Plane attains dimensions far exceeding those usually reached in England, while the Horse Chestnut is magnificent.

Italy, however, if she suffers by comparison with England from the standpoint of the cottage gardener, is not one whit behind us in the intensive culture of vegetables and fruits. In the market gardens and fields one sees a splendid assortment of green crops, such as Spinach, Lettuces, Radishes, Cucumbers, two kinds of Turnips, Asparagus, and Endive. Globe Artichokes are grown in immense quantities, along the western shore especially, while the Grape, Fig, Olive, Orange, Arbutus, and Cherry are among the fruits with which the markets abound. The fruit which interested me most, however, was the Loquat, whose acquaintance I first made fifty years ago in Canton. This is the product of the Chinese or Japanese Medlar (Eriobotrya japonica), a beautiful tree, which one may frequently find under cultivation in the private gardens of Rome. The fruit is shaped like a Pear, but is small, usually not exceeding the size of a Plum, golden in colour, of a somewhat acid or tart taste, to which I am partial, because it cleanses the palate. I found that English people, as a whole, did not take to it kindly. Our tastes are usually somewhat conservative, and we take time to acquire a liking for novelties. The best I had was in Genoa; those served at Rome and Florence were woody and wanting in succulent pulp, while the "stones" frequently numbered as many as six, so that there was little space left between them and the rind for the fleshy matter, which alone is edible. The name for the Medlar in Italian is *nespola*; the Loquat being distinguished by the addition of the word Japanese. Hence, the tree is called Nespolo del Giappone. This word *nespolo* and our word Medlar are one and the same. From the Greek *μεσπιλον* came the Latin *mespilum*, which in Old French was changed into *mesle*, a Medlar, the tree being named *meslier*. From this we obtained the word Medlar, the fruit of which was often called medles. In Italian, the initial letter has been changed, and thus mespilus has become *nespilus*, *nespolos*, *nespolo* (the name of the tree), and *nespola* (the fruit). The Arbutus was in full force in Venice by May, and was hardly to be distinguished by the casual observer from the delicious alpine Strawberry which occupied a place by its side on the fruit stalls.

Wherever the eye turns in spring, the valleys are seen to be under the most careful cultivation. Outside the great cities one sees miles of fertile land devoted to the culture of vegetables, or laid out as market gardens. Elsewhere the vineyards and Olive-yards are almost monotonous in their iteration. But even these afford the student much that is interesting. One notices in passing the different methods of viticulture. In many localities the vines are grown to-day, as they have been grown from time immemorial, on Elm trees. The trunk is about the height of a man, and three or four branches fork out in various directions. Against these the vine is trained, and in many places cords or rods are carried from tree to tree, or pergolas are formed for the growing shoots. In other places, slender rods, such as Bamboos, are used, while stouter stakes are employed elsewhere. When grown around the house the vines usually form an arbour, so that in the hot season each man (and his family and friends) may sit under his own vine and Fig tree—a beautiful Old Testament simile to represent peace and prosperity. Around Rome the vines are pruned in August.

The space between the vines, as in the the fruit orchards at Evesham and elsewhere, is utilised for the growing of a great variety of crops. Among others, I noticed Lupins, Potatos, Strawberries, Rye Grass, Rye, and other cereals, vegetables, and in particular, that brilliant fodder plant, the Crimson Clover (Trifolium incarnatum), which was in full flower in early May, though with us it usually does not blossom till June–July. Haymaking was in full swing in the eastern parts of Italy by the middle of May, and between Verona and Milan I saw again what I used to see in China, the land under water for the cultivation of Rice. I did not see any of our English small fruits, such as Gooseberries, Currants, or Raspberries, in the markets, and from observations *en route* was led to conclude that these are not largely cultivated in those parts of the country which I visited.

Turning now to the study of methods, one observes that, as a rule, husbandry has made no changes since the days of Virgil. The old, simple plough is still drawn by the patient ox, generally white or cream-coloured. The horse is usually little in evidence except in the cities, and there he is being ousted by motors. Mules and asses are fairly common, and in the wine districts all three of these animals are employed for draught. Cows, sheep, goats, and other animals are seldom seen grazing in the country. Near Rome I saw a flock of sheep, a small drove of cattle, and in one field a group of horses, about twenty in number, feeding together. The spade is shield-shaped or spathulate, with a long, bent shaft, but no place for the hand to pass through. The hoe and roller, as well as the "shaduf"-like arrangement for dipping up water, were all just as they have been for ages. Tivoli is, perhaps, the most interesting place to visit from this point of view. Here all the old methods still linger, while a few enterprising people are endeavouring to introduce new methods and bring things up-to-date. In all the hundreds of miles over which I travelled, I saw hardly any sign of the use of motor force in husbandry. Steam, petrol, electricity, and the like are still practically unknown in the market garden and on the farm; but with all this clinging to old methods, the results are very satisfactory, and the flowers, fruits, and vegetables are equal to those we find at home. *Hilderic Friend.*

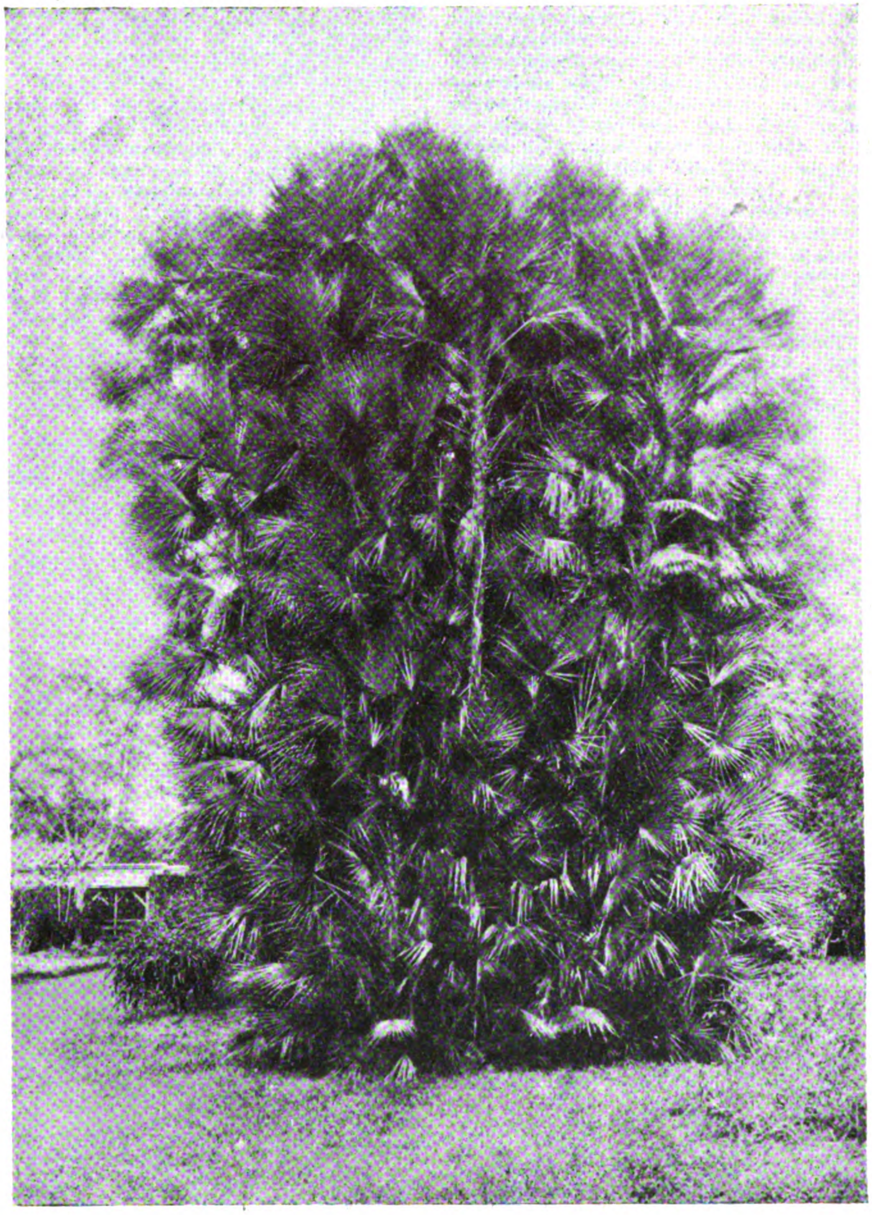

FIG. 181.—SPECIMEN OF ACOELORRAPHE GROWING IN THE BOTANIC GARDENS, GEORGETOWN, BRITISH GUIANA.

TREES AND SHRUBS.

A SELECTION OF AMERICAN WILLOWS.

(*Continued from page* 282).

An even more perplexing section than that referred to on p. 282 is Glaucae. The American species I refer to in this group almost baffle description. American authors like Rydberg or Ball used to unite them with the Ovalifoliae in one section. But it seems to me best to regard S. arctica and S. glauca as representatives of two different groups. Most of the sections in a genus like Salix are difficult to separate from each other. I have treated S. glauca and the species most closely related to it in a special paper in *Bot. Gaz.* LXVI. (October, 1918), and I am fully convinced that they still need a more thorough treatment. If we could cultivate at least a few of the species and forms mentioned below it would probably become easier to get a good understanding as to their variability and their relationship. A good character to separate the species of the Glaucae section from those of the Ovalifoliae group, seems to be the colour of the bracts. They are usually more or less bicolor, being pale at the base and dark or even blackish towards the apex in the Ovalifoliae, while the forms of the Glaucae mostly have uniformly yellowish, light brown, or straw-coloured bracts which sometimes become reddish or purplish towards their apex, but never become really fuscous or blackish. They bear, too, a different kind of pubescence.

In the Ovalifoliae, as I have already explained (*l. c.*), it consists of rather long, straight, silky hairs, of which at least the uppermost are of about the same length as the bract, which on its surface often become nearly glabrous In the Glaucae the hairs are comparatively shorter, less straight, and rarely distinctly silky, but are often softer and sometimes a little curly. The surface of the bracts is more or less covered with pubescence, and they are rarely distinctly ciliated at the apex with long, silky hairs. As a whole the habit of the species is different, too. Most members of the Glaucae group are rather stiff, but sometimes they are low shrubs with erect branches more like our S. lanata or S. Lapponum. There are, however, dwarf forms of procumbent habit, too, like S. fullertonensis, which seems to be an entirely prostrate shrub with very slender prostrate branches. Similar forms occur with S. cordifolia, as I shall explain later. They often resemble S. Myrsinites in habit.

A peculiar species is S. chlorolepis from the Gaspé Peninsula, a locality well explored by Fernald, who detected some interesting Willows on the famous Mount Albert. S. chlorolepis comes very near S. brachycarpa (syn. S. stricta), a western species widely spread through the whole length of the Rocky Mountains. It may be in cultivation in some European collections, and it is a graceful and well-marked species of bushy, much-branched habit and small, narrow leaves, the largest of which are hardly up to 4·5 cm. long and 1·2 cm. wide. The young shoots are more or less downy. I have tried to give a key for the determination of these difficult forms in *Bot. Gaz.* LXVII (January, 1919), and they are also described in the main keys in *Journ. Arn. Arb.* III (October, 1921). It needs a great deal of experience to distinguish these forms that often look so closely similar at first sight. To separate S. brachycarpa from certain forms of S. pseudolapponum, or *vice-versa*, is almost impossible for anybody not fully acquainted with the characters of this group. It may be that under cultivation they behave differently. There are certainly a great many intermediate forms of hybrid origin, as is the case among our European Willows. Those American species need a very close study by arboriculturists who have the opportunity of observing them in their native places. The flora of such a large mountain range as the Rocky Mountains is far from being well known. Botanists like Rydberg have only given just a sketch of their own observations and prior statements. Species like S. niphoclada and S. desertorum, both nearly allied to S. brachycarpa and S. pseudolapponum, still puzzle the most skilled salicologist.

Whether there is any true S. glauca in the New World at all is difficult to decide in the present state of our knowledge of the Old World forms of this species. It may be that such an eminent salicologist as Enander could decide this question. There are, in my opinion, a good many forms in Alaska and the Yukon Territory that can hardly be separated from forms of northern Asia and Europe, but I have kept them so far as var. acutifolia and var. glabrescens. The first is called S. Seemannii by Rydberg. I regard my statements as rather provisional, and I am sure it would help us very much if so many forms as possible were introduced from North-eastern America so that we might study the degree of variability on cultivated specimens. Some of these forms appear to be of a singular beauty owing to the pubescence and colour of their elliptic-lanceolate leaves, and the straight, cylindrical, silky aments [that mostly appear with the leaves or even a little later. The American S. glauca seems to form rather bushy, erect shrubs up to 1·5 m. high. The older branchlets often become of a shining castaneous colour.

S. cordifolia, of eastern North America, is of a different habit, forming low, sturdy bushes or even dwarf, almost prostrate shrubs. It is a widely distributed and apparently very variable species extending from southern Greenland to Labrador and Newfoundland. There is a very interesting variety, var. Macounii (syns. S. Macounii, S. Rydbergii, and S. vacciniformis), with rather small leaves growing on dry rocky limestone barrens.

The section Wolfianae is represented by one peculiar species only: S. Wolfii. This forms an erect, densely-branched bush up to 1 m. high, with short, downy twigs and narrow elliptic-lanceolate leaves measuring up to 20 mm. in length and hardly more than 7 mm. wide. It has been referred to section Cordatae or even Commutatae, but the male flowers possess a dorsal gland. In this respect it comes near the section Mexicanae, to which only a few Mexican species belong which have such dorsal glands, and in the structure of the female flowers it much resembles the species of the Cordatae. S. Wolfii and its variety idahoensis are of interest to any collector of Willows.

Section Cordatae, which contains a number of difficult forms, I am not well acquainted with. S. irrorata is the best and one recommended for gardens on account of its branchlets, which are covered with a glaucous bloom like our S. daphnoides, but, of course, this latter belongs to an entirely different group. S. irrorata is a native of New Mexico, Colorado, and south-western Texas, and would, therefore, be hardy only in the warmer parts of Central Europe. It forms dense, diffuse shrubs with stout branches up to 3 m. high. A very common Willow of the Central United States is S. missouriensis, growing in the valleys of the Missouri and Mississippi rivers, and representing a vigorous S. cordata, which has been known in Europe for more than a century. These Willows are of no peculiar value compared with many well-known European species.

Of much greater horticultural merit are some species of the section Adenophyllae. To it also belongs S. Chamissonis from Alaska, a creeping species with finely and closely serrated leaves, the teeth of which are, however, not distinctly glandular as in S. adenophylla. It would be of great interest to introduce S. Chamissonis. S. adenophylla (S. syrticola), which is widely distributed from Keewatin and the North East Territory to Labrador and through the region of the Great Lakes, was introduced long ago. It is well marked by the dense, glandular serration of the leaves, which are covered with long, whitish, silken hairs on both surfaces. The shoots are even more densely silky, with the exception of some glabrous forms. With its cordate-ovate leaves closely set on the branchlets, this species forms loosely branched shrubs up to 1·5 m. high. Its western counterpart is S. commutata from Oregon to Southern Alaska, of which the leaves are almost entire. Both have glabrous ovaries and filaments, which are pilose in S. Eastwoodiae and S. orestera from California. The lower, smaller leaves of S. Eastwoodiae show a serration similar to that of S. adenophylla.

The section Balsamifera is so far represented by only one species, S. pyrifolia (syns. S. balsamifera, and S. Columbiae), found in the region from Newfoundland and Southern Labrador westward to the Winnipeg region, but also further to the west in Saskatchewan, British Columbia, and the south-western part of the North West Territories. It has dark, shining, castaneous branchlets, and the leaves, which have a balsamic odour when expanding, show a distinct reticulation of the under-surface. This has been introduced but seems to have disappeared again. According to Sargent, it is beautiful in winter when the bright scarlet buds make the shining branches conspicuous.

Some of the finest species are met with in the section Chrysantheae, of which S. lanata is the type. I am by no means convinced that all the American species I at present refer to in this section really belong to one natural group. The affinity of S. lanata is very differently judged by our best salicologists. The following species seem to me of greater horticultural value than S. lanata, which according to Bean "is one of the handsomest of dwarf Willows, especially in spring, when the silver foliage and golden catkins are in admirable contrast."

The most beautiful species of this section seems to be S. alaxensis, a Willow from Alaska, the Yukon Territory and parts of Northern British Columbia, and which received the significant name of S. speciosa from Hooker and Arnott in 1832. But unfortunately this name had been used four years earlier by Host for quite a different tree. It forms large shrubs or slender trees sometimes almost up to fifteen metres in height, but the trunk is never more than twenty-five centimetres in diameter. As Miss A. Eastwood states, it is most beautiful in flower and the flowering trees swarm with various Lepidoptera, Diptera, and Hymenoptera. In the var. longistylis the twigs (which in the type are tomentose) have a decidedly blue colour from the presence of a conspicuous bloom. The leaves are covered underneath with a handsome white, dense, soft, felt-like pubescence. The styles are rather long, much resembling those of S. Barrattiana which is well marked by its semi-cordate persistent stipules which are densely glandular-serrate along the entire margin. S. Barrattiana comes from high mountain slopes in rather wet ground in Alberta and British Columbia, where it forms low shrubs of about the same habit as S. lanata. The same long styles are found in S. Richardsonii from Alaska and the North-West territories, and in its eastern counterpart S. calcicola from Ontario, Quebec, Labrador and Newfoundland. The last seems to be of rather prostrate habit, while S. Richardsonii, with its stout, hairy, young twigs, the large but acute, persistent glandular-serrate stipules and the smooth leaves, grows more erect. *Camillo Schneider.*

(To be continued).

BAMBOOS.

THESE include Arundinaria, Bambusa, and Phyllostachys, and are amongst the most beautiful of ornamental foliage shrubs. They are hardier than is usually supposed, but suffer more from cold winds than low temperature, hence, in selecting a site for them, some protection from the north and east should be ensured.

Although ordinary soil suits them, they, like most other plants, give the greatest satisfaction when they receive generous treatment, and to get good results they should be watered copiously and fed liberally during the growing season.

If transplanting or division of the clumps is necessary, it should be done at this season, when growth is commencing, as the plants will then grow away freely without feeling any ill-effects of the disturbance. Give the roots a liberal watering so soon as re-planting is finished, and mulch them with short manure. Clumps which need no transplanting should have some of the old growths removed to give the new culms reasonable room to develop.

Arundinaria japonica is a good species of free growth, and soon forms a thick mass with gracefully-arching branches and broad, dark-green leaves.

A. nitida is a choice species, but should be planted in partial shade. Its slender, purple-brown stems, furnished with short branches, are clothed with rich, vivid-green leaves.

Bambusa fastuosa is a tall-growing species with distinct plume-like habit, frequently reaching a height of fifteen-feet. The stems are short-jointed and well-furnished with leaves of a bright green above and distinctly glaucous beneath.

B. palmata is a strikingly handsome plant of a dwarf habit and free growth. It is useful for planting in the shade, and soon forms a dense clump.

Phyllostachys flexuosa is an effective plant, growing about twelve-feet high, with handsome, glaucous leaves.

P. nigra has slender, blackish coloured stems, often fifteen-feet high, with small, deep-green leaves. *W. Auton.*

STUARTIAS.

The Stuartias, or Stewartias as the generic name is sometimes spelt, are represented in our gardens by six species. Four are natives of the East and two come from the Eastern United States.

S. Malachodendron (see Supplementary Illustration), a synonym of which is S. virginica, is a native of the South-Eastern United States. According to Mark Catesby, author of *The Natural History of California*, the subject of the illustration was flowering in his garden at Fulham in 1742, though it is still far from common in our gardens.

It is a deciduous shrub or small tree up to some eighteen feet to twenty feet in height. The leaves are two inches to four inches long, ovate or obovate; the flowers are solitary, borne singly from the leaf-axils in July and August; they are three inches to four inches across with five white petals and a central cluster of purplish stamens. The largest specimen I have seen is nearly twenty feet high, growing in a garden at Iver Heath, Buckinghamshire.

The second species, native of the Southern United States, is S. pentagyna, a deciduous shrub ten feet to fifteen feet in height. The leaves are ovate up to five inches long, the flowers borne singly during August in the leaf-axils; they are cream-coloured, sometimes with a tint of red on the outside; three inches to four inches across, with a central cluster of yellow stamens. The variety grandiflora is distinguished by conspicuous purple stamens and a larger flower.

S. Pseudo-camellia is one of the tallest members of the genus, the rival being S. serrata, also from Japan. Professor Sargent records trees in Japan up to fifty feet in height. In cultivation it is readily distinguished from the American species by the upright habit of growth. The ovate leaves are two inches to three-and-a-half inches long, the white cupped blossoms two inches to two-and-a-half inches across, with orange-coloured stamens. They are produced in August.

During his 1901 expedition to China Mr. E. H. Wilson collected seeds of a new species, since named S. sinensis. He describes it as a deciduous bush or small tree ranging from six feet to thirty feet in height; native of Eastern Szechuan and Western Hupeh. The oval leaves are two inches to two-and-a-half inches long, the flowers white, one-and-a-half inch to two inches in diameter. The first flowers I saw of this species were sent to Kew in July, 1917, from a Devonshire garden.

Two other species are in cultivation, both natives of Japan, viz., S. serrata, said to be a common, wild tree, fifty feet to seventy-five feet high, and S. monadelpha, with which the new Chinese species S. sinensis was confused when first introduced.

The scarcity of good specimen Stuartias in our gardens suggests that care is necessary in the selection of suitable positions and soils for planting. Seeds, if obtainable, provide the best means of increase; failing these, layering one or two of the lower branches and inserting cuttings under a bell-glass during July or August may be resorted to.

A light, well-drained, loamy soil suits Stuartias, to which should be added leaf-mould and peat when preparing the stations for planting. Not being easy subjects to transplant successfully young plants should be placed in their permanent positions early and allowed ample space for their subsequent development. The intervening ground may be planted with Ericas or small-leaved Rhododendrons, which serve both as a protection to the young plants and to keep the soil surface cool. *A. O.*

PRUNUS SERRULATA SEKIYAMA.

The Japanese Cherries have flowered profusely in Kew Gardens this year, and none of them, perhaps, was more effective than the above variety, of which there are four large spreading trees on a low mound between the Palm house and the large lake. These trees were in perfection on May 9, and very conspicuous from afar. The flowers are double, fully two inches across without spreading out the petals, and bright pink when fully expanded. They are produced in clusters of three to four on long stalks, and are drooping, which may in a measure be due to their great weight. The variety does not appear in nursery lists which I have, but it may be compared to P. serrulata Hizakura or P. s. Hisakura, as the name is variously spelt. *J. F.*

PIPTANTHUS NEPALENSIS.

This fine shrub or small tree, referred to by *W. A.* on p. 374, is, unfortunately, not so free-flowering everywhere as your correspondent has experienced. I have known it in a good number of northern gardens and it has not proved satisfactory. It is not too hardy, and even where it is not badly cut in winter, it does not flower with the wealth of bloom it gives your contributor. It is for northern gardens far inferior to the best forms of the Laburnum. Where it blooms satisfactorily, it is, however, very fine. *S. Arnott.*

ALPINE GARDEN.

DIANTHUS FREYNII.

This tiny plant in silver and pink is a lovely little species, quite at home in the moraine; I have grown it with success in the rock-garden, in a well-drained, light and sandy soil and with a surfacing of chipping, and thus treated it will require a sheet of glass placed over it as a protection from winter damp. Grown in a pan with a few stones around it, it is delightful.

The silvery grey cushion is closely studded with myriads of pearly-pink flowers in the flowering season, and it may be described as an edition in silver of D. microlepis. D. Freynii is fairly easy to propagate from cuttings inserted in late summer.

I should describe this Dianthus as one of the most beautiful members of a wholly beautiful family. The plant flowers in spring and early summer. *Ralph E. Arnold.*

SAXIFRAGA GRANULATA FLORE PLENO.

This old plant, the double form of our native Saxifraga granulata, is not now frequently seen in gardens, yet it is of very considerable beauty in the rock garden. It was included in the exhibit of Mr. W. Wells, jr., at the recent Chelsea Show, but it is not often met with at these shows, probably because it is not considered sufficiently rare or effective. Yet it is a good plant with its double white flowers standing well above its pretty kidney-shaped leaves, with the bulbils by which increase of this double form is effected, as well as by division.

The single form, rarely found in rock gardens, is a charming plant, but not everyone will agree with the late Mr. Reginald Farrar's dictum that it is lovelier than the double form. The single S. granulata grows wild in Teesdale, and, curiously enough, I have had plants sent me from the coast of "the Southern Highlands" of Scotland. It appears to like a moist position. It is a pleasing subject for the lower flats of the rock garden, and is quite useful in a border of mixed hardy flowers. Its height is generally six or eight inches.

OXALIS ADENOPHYLLA.

From correspondence I find there is rather a widespread belief that the delightful pink Oxalis adenophylla is more tender than O. enneaphylla, its congener from Patagonia and the Falklands, O. adenophylla hailing from Valdivia. But I have not found this to be the case; even when the plant has been subjected to wet winters, unprotected by glass or other shelter, it has been unscathed when other subjects of reputed hardiness have succumbed to the fickleness of the season. But there is a great difference in the preferences of these two Wood Sorrels in regard to sunshine. O. adenophylla loves the full sun and will only give real satisfaction when exposed to the solar rays ,while O. enneaphylla delights in shade.

Last year I visited a garden where the two species were planted in practically the same conditions. Both were growing in shade and while O. enneaphylla grew and bloomed splendidly, E. adenophylla was evidently unhappy, for it was straggly and bloomed sparsely, whereas it ought to be compact and turf-like and almost covering its silvery leaves with its exquisite little pink flowers poised above the foliage. I am growing it in fullest sun and in a "pocket" low down in loam and leaf-mould with sand and grit intermixed. This rooting medium appears to suit it well.

I look upon O. adenophylla as one of the most exquisite of all our alpine flowers and feel confident that any who try it it full sun will have reason to be delighted with it. *S. Arnott.*

HELIANTHEMUMS.

Few plants present a more brilliant sight than the Sun Roses when grown in masses. Charming evergreen plants, of a dwarf habit, they are well adapted for the rock or wall garden and as margins to beds of dwarf-growing shrubs. A bank sloping south suits them admirably as it is only when exposed to the sun that they flower freely.

With the exception of H. formosum, which forms a much-branched shrub three feet or four feet high, the Helianthemums are dwarf and compact-growing.

The flowers are borne in great profusion; they range in colour from white and yellow to rich crimson and amongst later introductions are double-flowered kinds. Amongst the best garden varieties are Amabile, deep rose; Cupreum, copper colour; Golden Queen, rich yellow; Rose Queen, pure rose; Sudbury Gem, crimson; Sunbeam, brilliant red, and Salmon Queen, a beautiful variety.

The Helianthemums are of easy culture and succeed in any ordinary garden soil, which must, however, be well drained. Propagation is readily effected by means of cuttings of half-ripened shoots, which should be inserted in sandy soil in late June or July, and placed in a cold frame. A stock may also be raised from seeds. *W. Auton.*

SAXIFRAGA BATHONIENSIS.

This beautiful red Saxifraga is a very popular plant, and provides a bright patch of colour during April and May. The flowers open a vivid carmine, but, unfortunately, the colour fades in bright sunshine. No rockery should be without a few clumps of it. When established, the plant spreads freely and may be increased by division. Propagation can also be carried out during late summer by inserting cuttings in sandy soil and standing them in a shady frame. It makes a pretty edging plant when used around Forget-me-nots and yellow Tulips. *Charles Hodgson, Acton Place Gardens, Sudbury, Suffolk.*

HARDY FLOWER BORDER.

LAMIUM ORVALA ALBA.

This handsome plant appeared as a seedling in a neighbour's garden a few years ago. A cutting struck from the original specimen is now a fine clump nearly two feet high and as much across, and each of its sturdy, upright stems is whorled almost from base to tip with the large, helmeted flowers. These are a pure creamy white, silky in texture and show none of the purple of the type.

Though L. Orvala alba differs mainly from the type in the colour of its flowers, its foliage is a paler green and slightly smaller, the whole plant having a more refined appearance.

For a partially shaded spot in the mixed border, or a choice place in the woodland, this new-comer is a decided acquisition. Whether it will furnish white-flowered seedlings I have not ascertained, but it is easily propagated by cuttings or division. *A. T. Johnson.*

NURSERY NOTES.

KNAP HILL NURSERY, WOKING.

The firm of Anthony Waterer, Knap Hill, Woking, has claims to be included amongst the most famous of British nurserymen, and its several principals will always occupy prominent places in the list of pioneers who have made us a nation of gardeners. The place has a long history, for it has been in existence as a nursery for more than one hundred years, the founder being one Michael Waterer, who was succeeded by Hosea Waterer. The most famous member of the family was Anthony Waterer, senr., father of the late Mr. Anthony Waterer and of Mr. Hosea Waterer, who has lately succeeded to the business. Thus it comes about that a second owner bears the name of Hosea Waterer, but, as will be seen from our advertisement columns, the place is in the market so that the name of Knap Hill may soon cease to have any horticultural connection except that it will linger long in the memory and occupy a prominent place in the annals of gardening. It is claimed to be the oldest establishment in England in which the cultivation of American plants is made a speciality; at the present time it has an area of some one-hundred-and-fifty acres.

Trees and shrubs of all kinds, including Conifers, are included in the stock cultivated in this Surrey nursery, but by far the most important subjects grown are Rhododendrons and Azaleas, indeed, Knap Hill and the name of Waterer have been associated with these beautiful flowering shrubs for so long that Rhododendrons and Waterer are almost synonymous terms.

Mr. Anthony Waterer, senr., was one of the outstanding horticulturists of the Victorian era, and his fame was as wide in the United States of America and on the Continent as it was in this country. So long ago as 1832 he raised a hybrid Rhododendron between R. arboreum and R. caucasicum, and in the years that succeeded scarcely one passed without the introduction of new varieties of both Rhododendrons and Azaleas, and it is said that so high was his standard that anything he sent into commerce was certain to be an improvement on older sorts. He raised a new race of Azaleas from the Californian R. occidentalis, and both he and his successors have engaged in the breeding of these beautiful, floriferous shrubs with such success that some of the most charming varieties in existence have been originated by them.

The late Mr. Anthony Waterer was also a noted breeder of both Rhododendrons and Azaleas, and at the present time there is in the nursery some of the most charming sorts in existence, none of them named, but the envy of all who see them. They are known as the Knap Hill hybrids, and are principally the result of crossing Ghent Azaleas with Azalea mollis, and Ghent Azaleas with A. occidentalis. Like many other famous nurseries, and especially tree and shrub nurseries, the place suffered great neglect during the war years, it being impossible to find labour to do the necessary transplanting, with the result that hosts of fine trees and shrubs of all kinds were completely spoiled. Greater care, however, was taken with the seedling Rhododendrons and Azaleas, and the latter have been collected together by Mr. Hosea Waterer, who has succeeded Mr. Anthony Waterer, junr., in the ownership, and of the very large numbers he has selected some five-hundred-and-sixty, all distinct and all of merit. None of these, unfortunately, has been given a name, but at present they are all being grown under their seedling numbers. In many cases the individual flowers are of extra-ordinary size for Azaleas and the majority have large, well-formed trusses, "sitting," as the Azalea enthusiast terms it, well on the foliage. The colours defy description; suffice it to say that they are of all the most glorious shades imaginable. Usually the upper petal is of a different shade to the others; for instance, in one variety with a big round truss the flowers are of old rose shade with the upper petal blotched with orange and in this particular sort there were no fewer than nine pips in the truss. Another pink variety had a truss almost as big as that of R. Pink Pearl. The colour is light pink and deeper at the edges with a beautiful golden flush on the upper petal. Another glorious variety had white flowers with a yellow blotch and so on, the shades of yellow, orange, rose, pink, deep red and scarlet—to name only a few of the tints—equalling anything found amongst flowering shrubs. One variety with an extra big truss has cerise-pink petals with the whole of the upper petal coloured orange-bronze.

Azaleas of all types exist in this famous nursery. In one quarter is a big breadth of a late-flowering R. viscosum, the plants just opening their beautiful white flowers, which promise later to completely hide the foliage. Here one may also see magnificent specimens of some of the older species and varieties of the family and one that stood out conspicuously was a big bush of Azalea rustica fl. pl., while a splendid specimen of the double-blue Rhododendron fastuosum fl. pl. in full bloom was a spectacle of great magnificence. Many of these old plants have received no attention for years, but even in their unkempt condition they were of imposing grandeur, to which their handsome evergreen foliage contributed largely.

The soil at Knap Hill is so suited to Rhododendrons and Azaleas that they seem to flourish everywhere and never before have we seen Rhododendron Pink Pearl present such a glorious picture. A large, circular area with four equi-distant paths leading to a central circular bed was wholly planted with this variety, which was at its maximum of beauty, so that the effect may well be imagined. There are several other seedlings of the Pink Pearl type, some darker pink and others lighter pink, but they all seem to have the slight defect of an unduly long petiole which causes the truss to be a little floppy.

If one wishes to study the improvement that has taken place amongst Rhododendrons and Azaleas there is ample opportunity to do so, in the Knap Hill Nursery for large numbers of the older sorts are still grown, generally as a specimen here and there in the beds and borders. For example: the old Paul's Duchess of York was noticed, also rosea elegans and atro-sanguineum, both of the Catawbiensis breed, and in another spot we noticed the old variety Duchess of Bedford, and George Hardy of the Aucklandii type. Some of these veterans have grown to very large size and very noble they appear, but when they are compared with some of the modern types it becomes obvious how much we owe to such men as Anthony Waterer and his forbears.

NOTICES OF BOOKS.

The Horticultural Exhibitor.

So far as we can remember there are only two Books devoted especially to the needs of horticultural exhibitors and these are greatly dissimilar in character. The earlier book, entitled *The Book of the Flower Show,* was written by Mr. Charles H. Curtis, and is one of a series of horticultural handbooks published by John Lane. It deals with rules for floral and horticultural societies, methods of arrangement and display, pointing and judging, regulations for exhibitors, etc., etc., whereas in the new book* Mr. A. J. Macself devotes most of his space to cultural methods whereby a grower may become a successful competitor. Super-cultivation and exceptional attention to details are the points the author emphasises in many ways and his "don'ts" are as interesting as his "do's."

The national flower comes in for a large measure of attention, and rightly so; indeed the Rose is dealt with in two long chapters. The other sections of the book deal with Hardy Herbaceous Flowers; Hints on Cutting, Packing, and Other Points of Importance; Florists' Flowers; a Further Group of Florists' Flowers; Annuals; Pot Plants; Spring Flowers in Pots and Pans; Spring Bulbs; Flowers of Autumn; Vegetables; Fruit; and Artistic Floral decoration. In this last chapter the author very rightly pleads for originality, and he advises his readers to "carry out your own ideas, adopt a style of your own prompting, and avoid even the attempt to copy others."

The task which the author has set himself is no light one, but within the compass of his own design he has fulfilled his purpose. It is doubtful whether any author could give every exhibitor all the information desired, but we believe every competitor will find some valuable information in Mr. Macself's book, while the novice will derive great profit from the careful perusal of its pages, insomuch as the things he ought not to do are stated with emphasis, and thus he may save himself many troubles and disappointments that otherwise he would discover only as a result of bitter experience.

The book contains numerous illustrations, but there is a lack of striking examples of ideal exhibition blooms, or ideal exhibits.

We are persuaded that the flower show has served a useful purpose, and will continue to do so, consequently we endorse Mr. Macself's observations that "the flower show is a great and grand institution, gratifying the innate sporting spirit of the British character, and affording rare opportunities for revelling among the objects of affection and enjoying intercourse with kindred spirits. Whatever may be the objections of the small minority who affect to despise and disapprove of exhibitions, it is beyond denial that British horticulture owes its progress and its prestige in very large degree to the influence and impetus of the show bench, and no enterprise is more calculated to sustain and promote the ever-growing interest in horticulture than the organisation of a great show, especially one which concentrates upon a schedule drafted on lines that enable amateur exhibitors of all grades to participate."

**The Horticultural Exhibitor.* By A. J. Macself. The Home Garden Books, No. 6. Thornton Butterworth, Ltd., 15, Bedford Street, W.C. 2. Price 3/6 net.

VEGETABLE GARDEN.

BOUQUET BROCCOLI.

This Bouquet Broccoli (Fig. 182), which produced fifteen heads, was grown by a retired railway signalman, Mr. John Dunham, on a Great Northern allotment in Park Road, Spalding. When photographed, there were fourteen heads, ten in the front and four on the other side; originally, however, there were fifteen, but one was broken off by the wind. Fifteen heads is an exceptionally large number, and Messrs. Sutton and Sons (whose speciality this is) give the number which the Broccoli generally yields, as five to twelve and state that they had not previously known more than a dozen. *S., Spalding.*

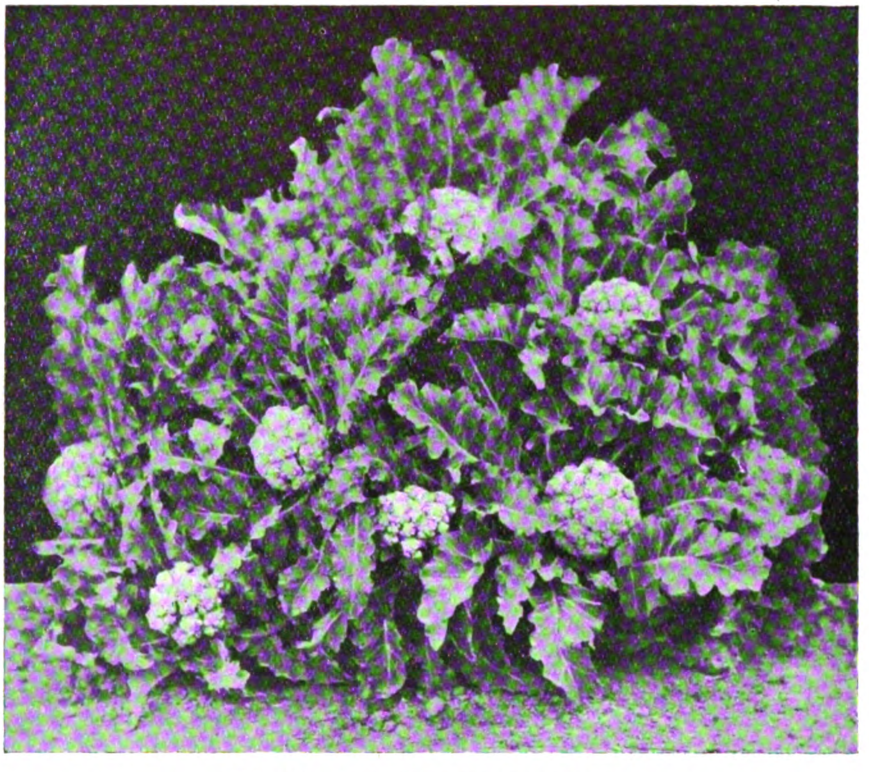

FIG. 182.—THE BOUQUET BROCCOLI.

APPLE-LEAF SCORCH.

Mr. E. Brown (p. 288) asks for examples of leaf scorch appearing on trees that have been well manured. I think mine have had plenty of manure, but whether it has been well chosen or not may be open to doubt. At any rate, I give, for what it is worth, the manuring of the trees which showed leaf-scorch so badly in 1924.

Beauty of Bath.—1923: Meat meal, five cwt. per acre. 1922: Shoddy, two tons per acre; ground chalk. 1921: Castor meal and kainit in winter; complete artificials in August. 1920: Shoddy.

It will be seen that the manuring has been on the nitrogenous side.

Cox's Orange Pippin.—1923: No manure. 1922: Shoddy. 1921: Castor meal in winter; complete artificial in August. 1920: Farmyard manure; basic slag.

I do not think that leaf-scorch can be traced to starvation, because it is notoriously less common on trees in grassed orchards, where starvation is more likely than in cultivated orchards. I believe that grassing down is the most promising remedy for leaf-scorch in many cases. In any case, I want to give the potash treatment a fair trial first, because my soil, when analysed by Dr. Dyer some years ago, was reported to be particularly lacking in potash.

With regard to Mr. Brown's suggestion that leaf-scorch and die-back may have some connection, I would mention that a few of my trees which suffered most severely from scorch have died back badly. I assumed that this was due to their having been almost entirely defoliated.

In reply to Dr. Durham, he may be in a position to criticise the conduct of the pot experiments at Long Ashton. As to that, I am not competent to judge. But when one of our leading research stations satisfies itself that lack of potash is one of the causes of leaf-scorch, it is reasonable for a grower to try potash as a remedy. That is all I suggested doing in the article which gave rise to this controversy. I did not "advise expenditure on costly potash manuring": I merely recorded the fact that I was trying it.

I am not impressed by what Dr. Durham states about the amount of potash in the soil at East Malling or elsewhere, because, as he himself admits, we do not know what the potash requirements of Apples may be. It is reasonable to suppose, however, that more fruit land is potash-starved to-day than used to be the case, because the repeated dressings of farmyard manure (rich in potash), which were the rule, have had to give place to dressings of substitutes mainly of an organic nitrogenous nature, in most cases entirely wanting in potash. *Market Grower.*

INTERNATIONAL SHOW AT HEEMSTEDE.

With the advent of the Sixth Special Show on May 14th, the big International Exhibition entered on its "last lap"—as one read in the headings of the *Amsterdam Telegraph* the next morning. The whole has been a mighty affair, and however in the past the other five "Specials" in the Floral Hall have compared with the display outside, on this occasion the extent and interest of the Tulips in the plantings out-of-doors placed the sixth special show in the position of second fiddle so far as the display under cover was concerned. It will be news to many in Britain that there is a mild Tulip mania taking place in Holland at the present time. Prices for new and likely varieties are very high because everyone wants to get those which will be suitable for the cut flower trade, especially if they can be had in good condition about Christmas time either for the market or as pot plants. Will the new Mendel Tulips be suitable for either or both of these purposes? Many think they will, and they are prepared to back their opinion by their purchases. I was told of a firm which in 1922 or 1923 laid out £100 at Krelage's sale, which had sold some of these bulbs the week before the Show for £5,000. The figures are substantially accurate enough to show what is going on with respect to these newcomers. Hence, the permanent plantings of Mendel Tulips outside may be put down as one of the great features of the last show.

Mendel Tulips are to be given a good trial. There are potentialities in the race which must be explored. Named varieties are expensive as yet, but I think enough has been stated to indicate that they should be watched. Lilaran (mauve), Lilano (soft shade of pale purple), Salmoran (salmon or orange-pink, a difficult colour to describe), Etna (crimson), Flambeau (scarlet), Morning Star (after Cottage Maid), and Amsterdam (after Keizerskroon) are a rather haphazard selection of some of those which caught my eye.

Inside, the display of Hortensias, or as we call them, Hydrangeas, eclipsed all else in horticultural interest. How could it be otherwise, when two of the most famous raisers in the world were exhibiting—Friedrich Matthes from Dresden and D. Baardse of Aalsmeer! The group of the first-named was small, but his two named varieties were splendid, Heiderosell, a lovely rose-pink, and Gertrude Glahn, a fine blue. None of the Dutch raiser's sorts were named, and almost all were plants with a single stem—"Eenpooties" the local people call them. They formed, nevertheless, a remarkable display, and everyone with whom I talked said they provided the best exhibit in the building. The dull pink Parsifal was well shown at the opposite end by Mr. Dirk Spaargaren. I think it was in that wonderful collection of Hydrangeas exhibited by Mr. H. J. Jones at Chelsea, 1924. The Heemstede growers combined, as they did in early March with their Hyacinths, and set up a very large display of ordinary commercial varieties of Tulips. A path divided it into two. On one side purples and yellows predominated, and on the other reds, roses, and pinks. The colours were skilfully blended, but each individual bunch was a solid mass. I did not care for it, but it showed the effect of planting in beds or large groups. Belladonna (yellow with broad, rosy edges), Jupiter (rose), Nectar (rose, with petals slightly recurving), Roi de Siam (ruby-red), and Dawson City (pale yellow) were some of the more uncommon I noted. After these Tulips came, in my order of merit, the large display of fresh vegetables set up by MM. Vilmorin-Andrieux and Co., of Paris. Maybe its being there at all was a slight mistake, but to another English visitor and myself it was of great interest. It was all arranged almost on the ground, and so was totally different from what we are accustomed to see in England.

The early flowering Sweet Peas, grown by Messrs. J. Hoogensteijn and Son, and beautifully arranged by Miss Annie Wigman, showed what Californian-grown seed is capable of producing in an ordinary way. None of the plants from which the flowers were cut were disbudded.

The big decorative effort of Mr. Van Empalen must be mentioned, but the easel with its Lilac frame was too artificial altogether. So was the aeroplane of red and white Tulips which was shown in another part of the Hall. The rock-garden of Mr. A. Koper; the exceedingly pretty display of cut flowers (mostly Tulips) of Messrs. Alb. Bos and Son; the Trollius seedlings of Messrs. G. Lubbe and Son and Messrs. Van der Kwaak; and the fine orange Geum (Princess Juliana) of Messrs. W. van Veen, of Leiden, were all worthy of note.

But I must not forget the quaintest exhibit I have ever seen, viz., that of Mr. J. H. Spanjaard, which consisted almost entirely of edible Fungi, shown both growing and in bottles. It was quite small, but the crowd round it when I was note taking indicated its popularity. *Joseph Jacob.*

HOME CORRESPONDENCE.

Exochorda grandiflora and Berberis stenophylla.— The office of press censor is deservedly unpopular, but whereas gardeners and amateurs alike are accustomed to accept statements in *The Gardeners' Chronicle* as authoritative, I venture to call attention to two statements on p. 347 as at variance with fact. Exochorda grandiflora owes its name of Pearl Bush not to its seeds, which are dark brown when ripe, flat, narrow and pointed, but to the white flower buds, which, set in erect racemes, bear some resemblance to pearls. This beautiful bush ripens plenty of seed here, from which a stock may easily be raised. Berberis stenophylla, described by your correspondent as a Chinese species with pale yellow flowers, is a hybrid of accidental origin which appeared in the Handsworth nursery of Messrs. Fisher and Holmes, Sheffield, the parent species being B. Darwinii and B. empetrifolia, both Chilian species. The colour of the flowers is very rich yellow. *Herbert Maxwell, Monreith.* [We are obliged to Sir Herbert Maxwell for his corrections and plead extenuating circumstances, *i.e.*, the exceptionally heavy work Chelsea Show entails.—*Eds.*]

Stephanotis Seedlings.—Possibly some of your readers may have seen fruits of Stephanotis floribunda, but I do not remember hearing or reading of any one who has raised seedlings from seeds ripened in this country. I noticed two fruits on one plant in September, 1923, and these opened in December, 1924. Early in the present year, some of the seeds were sown, and now there are several strong seedlings, I should like to know whether any other gardener has had a similar experience. *C. May, Shirburn Castle Gardens, Watlington.*

Ranunculus bulbosus flore pleno.—Of the several double species of Ranunculus grown in gardens the above is seldom seen at the present day, though it must have been very common in British gardens in ancient times. A form of it is figured by John Gerard, in which the very double flowers have a second and occasionally a third smaller flower growing from the centre of the first and second respectively and supported on a short peduncle. This proliferous form is also described and figured by Parkinson in his *Paradisus Terrestris*, and both call it the Great Double Crowfoot or Bachelor's Buttons. Another name for it was St. Anthony's Turnip, from the tuberous rootstock. Loudon does not list it, though he says in a footnote that the "flowers are sometimes double, but not so frequently as R. acris." This would mean that it was scarce in his day. The description of Great Double Crowfoot must apply to the size of the flowers, for the plant varies between six and twelve inches in height and the flowers are very much larger than those of R. acris. They are also greenish-yellow in the centre, a fact that has been overlooked by most writers, except Parkinson. I have seen it within recent years in Regents Park, and Messrs. Maxwell and Beale showed it at Chelsea the other week as a very rare plant. Messrs. Vilmorin described it as R. speciosus in *Flore Plein Terre*, 1st Ed., 722. *J. F.*

The Age of a Leaf.—We are wont to speak of evergreen leaves without considering the number of years they can keep green. From what I have noted of the Evergreen or Holm Oak, none of the leaves endure longer than twelve to fifteen months. In Pinus sylvestris and P. Pinaster they last about three years; in P. mitis, two to five years; and in P. montana, five or more years. A leaf of Aspidistra lurida variegata, which I had marked in 1915, lived to 1924; two others marked in 1916 lived till the spring of this year. Half of one of the latter two was white and this died in a few years, but the other longitudinal half lived out its full time apparently. Thus the leaves of Aspidistra live for nine years, judging by the behaviour of three of them. The plant had been grown in windows since 1887, having been divided and repotted many times during that period. The leaves have varied from twelve to thirty inches in length, the smaller ones being due to crowding and excessive variegation. In some years a little fertiliser was applied, but in the great majority of years nothing has been given beyond a little horse manure in the soil at potting time. During winter water may only be given once in seven to fourteen days. At present there are thirty-three leaves in a seven-inch pot, besides the developing ones. *J.*

Paeonia obovata alba.—Can anyone tell me the difference between this plant (see Fig. 164, p. 367), which received a First-Class Certificate at the recent Chelsea show, and Paeonia Willmottiana, which received a similar award at the Chelsea show of 1914 and was figured in *The Gardeners' Chronicle*, p. 251, May 24, of that year? *Amateur.*

White-flowered Savoy.—In the extract from Lyte's translation of the *Herbal* of Dodonaeus in my article on "Savoy Cabbage," which appears on page 340 of *The Gardeners' Chronicle* for May 16, occurs the following sentence:—"After winter it bringeth forth its stalke with faire *white* flowers." The word white is printed in italics to arrest attention. My object in writing now is to ask if any reader of the *Gard. Chron.* knows of a variety of Savoy that produces white flowers. In a long experience of seed growing I have never seen a flowering plant of Savoy that answers this description, and various friends whom I have consulted all tell the same story. If any of your readers know of such a variety they will be conferring a favour if they will kindly furnish its name. I have verified Lyte's translation: the original reads *Schoone witte Bloemen.* All flowers of the Savoy that have come under my notice have been bright yellow. *S. B. Dicks.*

Primula pulverulenta Bartley Strain.—With reference to the note from Mr. G. H. Dalrymple regarding the above in your issue of May 30 (p. 378) I am growing a dozen or so of these plants in my garden and these have been in bloom for some time and still continue in flower. Every one of them has given pink flowers, varying somewhat in shade, but all very beautiful. The plants were all seedlings and had been unproved when I received them. They are, as Mr. Dalrymple states, quite distinct from Mrs. R. V. Berkeley. The Bartley Strain is very beautiful and the plants are most robust as well. By the way, Mr. Dalrymple's reference to Primula Mrs. R. V. Berkeley reminds me that some years ago I saw at an Edinburgh show a plant said to be a P. Mrs. R. V. Berkeley, which exactly resembled it, and was claimed to be a fertile form. I have lost track of this plant. Mr. Dalrymple is to be congratulated in securing such a charming strain of the fine Primula pulverulenta. *S. Arnott.*

SOCIETIES.

ROYAL HORTICULTURAL.

Trial of Motor Lawn Mowers and Accessories.

A trial of motor lawn mowers and accessories, organised by the Royal Horticultural Society, took place on May 13, in Regent's Park, kindly lent for the purpose by H.M. Office of Works. On the reports of the judges appointed for this trial the Council of the Royal Horticultural Society has made the following awards.

Awards of Merit.

Motor lawn mower from Messrs. Thos. Green, Ltd., New Surrey Works, Southwark Street, S.E., for use on sports grounds and similar areas; motor lawn mower from Messrs. Shanks and Son, Ltd., Bush Lane House, Cannon Street, E.C., for lawns; motor lawn mower from Messrs. Dennis Bros., Ltd., Guildford, Surrey, for lawns; motor lawn mower "Jehu" from Messrs. Alexander Shanks; motor lawn mower from Messrs. Dennis; heavy motor lawn mower with trailer seat, from Messrs. Thos. Green; light motor lawn mower with trailer seat, from Messrs. Thos. Green; "Wizard" motor lawn mower from Messrs. Shanks for small lawns.

Highly Commended.

Atco motor mower with seat, from Messrs. C. H. Pugh, Ltd., Whitworth Works, Birmingham, for large lawns; twenty-four inch Auto-mower, with seat, from the Auto-Mower Engineering Co., Norton St. Philip, near Bath; eighteen-inch Auto-mower, with seat, from the Auto-Mower Engineering Co.; Atco motor mower, from Messrs. C. H. Pugh, Ltd., for small lawns; Acto motor mower, with twelve blades and special sole plate, from Messrs. C. H. Pugh, Ltd., for very fine lawns; G.N. motor attachment for lawn mowers, from Messrs. G.N., Ltd., East Hill, Wandsworth, S.W.; Motor pusher, with fore-carriage, from the M.P. Co., Ltd., 550, Oxford Street, W.1., for drawing lawn mowers, etc.; Rendle motor mower attachment, from W. Edgecumbe, Rendle and Co., Ltd., 5, Victoria Street, S.W., for pushing lawn mowers; Trailer seat for lawn mowers, from Dennis Bros.

Commended.

"Governor" water-cooled motor lawn mower, from Messrs. John Shaw and Sons (Wolverhampton), Ltd.; "New Godiva" motor mower, from the Godiva Engineering Co., Ltd., Trading Estate, Slough, Bucks.; Atco motor lawn mower, from Messrs. C. H. Pugh, Ltd.; Automo motor lawn mower, from Messrs. F. Mitchell, Derby Road, Nottingham; Motor pusher, from M.P. Co., Ltd., for pushing lawn mowers.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, May 1.—*Committee present:* R. Ashworth, Esq. (in the chair), Messrs. A. Burns, A. Coningsby, J. Cypher, J. Evans, G. Giles, Capt. W. Horridge, A. Keeling, D. Losh Thorpe, J. Lupton, J. McCartney, E. W. Thompson, and H. Arthur (Secretary).

First-Class Certificates.

Brasso-Cattleya Apollo var. Earl of Chester.—A flower over eight inches across and coloured pale pink; the large lip has a yellow throat and deep crimson base; *Odontioda Breworthii (Brewii × Charlesworthii).*—A large, well-shaped, mahogany coloured flower with a large flat lip. From A. Hanmer, Esq.

Brasso-Cattleya Jupiter Empress.—A flower of even colour and with a round, fringed lip. From Mrs. Gratrix.

Cattleya Ashlands (*Tityus* × *Dupreana*).—A handsome flower with a round, fringed lip having an orange-yellow throat and a deep crimson base. From R. ASHWORTH, Esq.

Sophro-Laelio-Cattleya Mense var. The King.—One of the finest forms yet seen, of even colour. From S. GRATRIX, Esq.

Odontoglossum Amabilicity (*amabile* × *Felicity*).—A well-shaped white flower, four inches across, with pale lilac blotches and spots. From P. SMITH, Esq.

AWARDS OF MERIT.

Brasso-Cattleya Jupiter var. Ashworthiae; *Brasso-Cattleya Apollo*; *Odontioda ashlandense*. From R. ASHWORTH, Esq.

Brasso-Laelio-Cattleya Roumania, Edgemoor variety, and *Odontoglossum Diadem*. From A. HANMER, Esq.

Odontoglossum crispum Coronet. From Mrs. GRATRIX.

Odontoglossum crispum White Ensign. From S. GRATRIX, Esq.

Odontioda Valeria, Bolholt variety (*Odm. Jasper* × *Odta. Cooksonii*). From CAPT. HORRIDGE.

Brasso-Cattleya Cliftonii, Beardwood variety. From COL. SIR J. RUTHERFORD, Bt.

Cymbidium Alexanderi Pink Pearl. From J. McCARTNEY, Esq.

Dendrobium Griffithianum superbum. From Messrs. KEELING AND SONS.

GROUPS.

A Gold Medal was awarded to S. GRATRIX, Esq., West Point (gr. Mr. C. Branch), for a group of Orchids; A. HANMER, Esq., Buxton (gr. Mr. G. Giles), was also awarded a Gold Medal for his exhibit.

Mrs. BRUCE and Miss WRIGLEY, Bury (gr. Mr. A. Burns), staged a group for which a large Silver Medal was awarded; Silver Medals were awarded to R. ASHWORTH, Esq., Newchurch (gr. Mr. W. Hough); CAPT. W. HORRIDGE, Bury (gr. Mr. A. Coningsby); Messrs. J. CYPHER AND SONS, Cheltenham; J. EVANS, Esq., Colwyn Bay; and Messrs. KEELING AND SONS, Bradford.

FRIDAY, MAY 15.—*Committee present*: J. McCartney, Esq. (in the chair), Messrs. A. Burns, A. Coningsby, J. Evans, G. Giles, A. Keeling, E. W. Thompson, and H. Arthur (Secretary).

FIRST-CLASS CERTIFICATES.

Odontoglossum Laurantia var. Collosus (*Jasper* × *Olympia*).—A large, well-shaped flower, densely spotted with violet-brown; the lip is large, flat and spotted; *Odontoglossum crispum R. G. Felton.*—A large, white flower with fimbriated sepals and petals and fine pin-like spots. From P. SMITH, Esq.

Odontoglossum Faustina superba.—A flower with deep red-claret sepals and petals tipped with a lighter shade. From A. HANMER, Esq.

AWARDS OF MERIT.

Odontoglossum crispum var. Royal Rosette. From Mrs. GRATRIX.

O. crispum var. Queen of Denmark. From S. GRATRIX, Esq.

Odontioda Elaine var. Perfecta. From P. SMITH, Esq.

GROUPS.

S. GRATRIX, Esq., West Point (gr. Mr. C. Branch), staged a group for which a Silver-Gilt Medal was awarded.

A Silver-Gilt Medal was also awarded to A. HANMER, Esq., Buxton (gr. Mr. G. Giles), for a group.

Mrs. BRUCE and Miss WRIGLEY, Bury (gr. Mr. A. Burns), staged a group of Orchids to which a Large Silver Medal was awarded.

The Cypripedium exhibited by Mrs. BRUCE and Miss WRIGLEY at the meeting on April 17 as C. Wrigleyanum and which received an Award of Merit, has been re-named and recorded as Cypripedium O. O. Wrigley.

SOUTH AFRICAN ASSOCIATION OF NURSERYMEN AND SEEDSMEN.

THE ninth annual general meeting of the Association of Nurserymen and Seedsmen of the Union of South Africa was held at Pretoria on April 14, Mr. Christopher Starke, of Cape Town, presiding.

The chairman dwelt upon the meagre support accorded to the association by the members of the trade in the Union. He submitted that, with the re-organisation of the agriculture of the Union and the change of conditions, greater service would be demanded from all seedsmen, and this could only be given by all nurserymen joining the association, and making it a live and strong body.

Colonel G. N. Williams, Under Secretary for Agriculture, hoped that the association would organise and the Government assist it to the greatest possible extent. The Government had recently engaged Professor Webber, of the University of California, and good results would accrue from his work, especially with regard to Citrus growing. Dr. Pole-Evans and Mr. C. P. Lounsbury, the respective chiefs of the divisions of Botany and Entomology, had always assisted the association, and the Government would continue to give the nurserymen and seedsmen advice through eminent technical men such as the two gentlemen named.

Major Hunt, President of the Transvaal Agricultural Union, said that good seed as well as good stock was the foundation of all successful farming, and he hoped that through the deliberations of the Association, restrictions would be placed on the sale of seed, so as to ensure only good seed being sold.

Mr. D. A. English urged that the Government should be asked to set aside the sum of £11,000 for the investigation of fruits suitable for growing in the various fruit-growing areas of the Union.

Mr. R. W. Thornton, Director of Field and Animal Husbandry, said that the Government had now remedied the under-staffing of the Horticultural Department, and bursaries had been granted to young South Africans to enable them to study horticulture. For a number of years farmers in South Africa had pressed the Union Government for the establishment of demonstration plots in different parts of South Africa. These requests had now been acceded to, and eight plots were to be laid out in various parts of the Union. Plots would be established on similar lines to those of Canada and elsewhere. He thought, however, that the association should pass a definite resolution in the matter, so that a stated sum should be allocated for the work. In reference to the Peach-canning industry there was a very great deal of experimental work to be done, and he hoped that the association would give the Government and the experimenters its assistance. With collaboration, he anticipated that the industry would become a flourishing one.

Mr. Lounsbury said that he was not quite in favour of experimental orchards, as suggested by a member of the association. What he considered was needed was a large and competent staff of Government horticulturists who would study the conditions in the various parts of the Union, and advise on the data thus obtained.

A resolution was adopted on the lines of Mr. English's suggestion.

Among the more important proposals discussed were:—(a) That the Postmaster-General be requested to introduce the c.o.d. system in the Post Office; (b) That the Minister of Agriculture be requested to abolish municipal trading in plants, trees, etc.; (c) Owing to the deterioration of Lucerne seed, that the Government be requested to remove restrictions regarding imported Lucerne seed.

ROYAL SCOTTISH ARBORICULTURAL—ABERDEEN BRANCH.

THE first meeting of the Aberdeen branch for the season was held in the Douglas Hotel, Aberdeen, on Saturday, the 30th ult. Mr. C. S. France, the president, was in the chair.

In his presidential address, Mr. France made a strong appeal for the establishment of a Chair of Forestry in Aberdeen University. He pointed out that the Senatus of Aberdeen University had agreed to the establishment of such a chair, and it only required the raising of the necessary endowment to set it in operation. He felt that the branch, in conjunction with the northern branch, might make an effort to assist in raising the required sum. These two branches represented the area of Scotland of which Aberdeen University is the educational centre.

Mr. France also made reference to the important work of afforestation. The Forestry Commission had now been at work for about five years, and large areas of waste lands had been acquired and many thousands of acres had been planted under its direction. He believed the effect of this national effort would now be continuous. He saw a large sphere open for properly trained and educated foresters. They as a society had already done much towards providing foresters of that description, and in conjunction with the University there were now the means, if properly applied, of fulfilling that object. But he felt they could do a little more. There were many young men at present working in the woods who desired to learn and equip themselves as foresters, but they were, in a great measure, retarded by circumstances. He suggested the admission of all assistant foresters to the branch, on payment of a small subscription, and that they be distinguished as associate members. Prizes might be offered for reports or essays on any subject in forestry that came under their observation.

In conclusion, the president suggested that they should publish annually, for the use of members, a record of their work and proceedings, and that the parent society be approached for assistance.

Mr. John Michie, M.V.O., referred to several points raised by Mr. France and moved that the suggestions contained in the president's address be remitted to the committee for consideration and report. This was warmly agreed to.

Mr. F. W. Law, M.A., B.Sc. (Agr.) of Messrs, Ben Reid and Co., nurserymen and seedsmen, Aberdeen, then gave the members a very informative and instructive address on "Some Aspects of Forest Protection." Dealing first with the ravages of forest pests, Mr. Law proceeded to give some admirable advice on the subject of forest fires, and the grave dangers that existed nowadays to large areas of woodland from careless tourists, motor cars, railway engines, steam wagons, and the wanton throwing away of cigarette stumps.

Mr. Law's timely and interesting address was greatly appreciated, and in the course of the discussion which followed Mr. J. F. Annand, of the Forestry Commission, considered that the cigarette smoker was a bigger sinner than the railway companies in causing forest fires.

The President intimated that the sum required for the endowment of a Chair of Forestry at Aberdeen was £5,000. Sir John R. Gladstone, Bart., of Fasque and Balfour, Kincardineshire, late president of the Aberdeen branch, and now National President of the Society, announced that he would be pleased to contribute to the fund. A number of distinguished gentlemen were added to the branch membership.

LAW NOTE.

AGRICULTURAL SOCIETY'S HEAVY LOSSES.

Under a compulsory winding-up order, made on July 29. 1924, against the Agricultural Wholesale Society, Ltd., St. Lawrence House, 48, Mark Lane, E.C., the Official Receiver in the High Court has issued his observations on the liquidation. A statement of the society's affairs showed, as regard creditors, ranking liabilities £221,039, and total assets £5,032. After deducting preferential claims, the net assets, subject to cost of liquidation, are £4,785. As regards shareholders, the paid-up capital was £81,449, and the total deficiency is £297,703.

The report states, *inter alia*. that the society was registered in September 1914 as the Farmers' Central Trading Board, Ltd., to act as a central trading federation for the agricultural co-operative societies and smallholding and allotments' co-operative societies in Great Britain, Isle of Man, and the Channel Islands, and to carry on the industries of manufacture of, and wholesale and retail dealers in, agricultural machinery, implements, and requirements of all kinds, and of spare parts. During the first four years of its career the society did very little business, but a small profit was made. In 1918, proposals for placing the agricultural co-operative movement on a better footing resulted in the name being changed to the Agricultural Wholesale Society, Ltd. (generally known as the A.W.S.), and further trading departments were opened.

The directors at the date of liquidation consisted of:—The Rt. Hon. F. D. Acland (chairman), Sir Leslie Scott, K.C., M.P.; W. H. T. Hearle (West Midland Farmers); Mr. W. R. Hopkinson (Southern Counties Agricultural Trading Society, Ltd.); Mr. J. P. T. Jackson, J.P. (Preston Farmers' Trading Society, Ltd.); Mr. George Mills (Yorkshire Farmers, Ltd); Mr. C. C. Smith, J.P., C.C. (Eastern Counties Farmers' Co-operative Association, Ltd.); Mr. J. B. Leslie-Smith (Northern Agricultural Co-operative Society, Ltd.); Mr. W. E. Stamer (Shropshire Farmers, Ltd.); Mr. Walter West; and Captain Lord Stanley, M.C., M.P.

No share qualification was required of, and no remuneration paid to, the directors who, with certain exceptions, were elected for different areas on a capital-subscribed and turnover basis.

The society's trading results from 1918 showed the following losses:—1919, £39,625; 1920, £156,104; 1921, £46,306; 1922, £22,581; and 1923, £41,037. The turnover in 1919 increased to nearly £2,000,000, but heavy losses were made in the feeding stuffs department; and after 1920 the turnover decreased rapidly.

The failure of the company is attributed by the Rt. Hon. F. D. Acland to (1) Societies under trading agreements with the society failing to carry out their agreements to give the society the opportunity of doing their trade on equal terms with other suppliers. Owing to this, the turnover of the society, though always showing a gross profit, showed a net loss, as it was not sufficient to carry the overhead expenses and charges previously incurred. (2) The discovery of the defalcations of Frank Carlyle Mitchell, the managing director, which destroyed confidence, and thus made it impossible for the directors to put through a tighter scheme of trading agreements which they had in hand. Mitchell was charged on October 31, 1924, with defalcations amounting to £5,787, and sentenced to a term of imprisonment.

SCHEDULE RECEIVED.

County Borough of Southport.—Great flower show to be held in Victoria Park, Rotten Row, Southport, on Wednesday, Thursday, and Friday, August 27, 28, and 29, 1925.—Secretary, Mr. T. E. Wolstenholme, Town Hall, Southport.

TRADE NOTE.

At the May meeting of the Chamber of Horticulture the members present were informed that a Bill for the marking of foreign produce was in course of drafting, therefore the position of the industry as to the marking of fruit and vegetables should be examined *de novo*. The 1923 Merchandise Marks Bill was re-examined, the Secretary reminding the meeting that this Bill, originally a private one, had successfully passed the Committee stage in 1923, after which the 1923 Conservative Government accepted responsibility for the same. Before the third reading Parliament dissolved.

After discussion, on the motion of Mr. F. W. Ladds, seconded by Mr. George Monro, it was unanimously agreed to ask the Ministry of Agriculture to use its best endeavours to obtain inclusion in the new Bill of clauses on similar lines to the undermentioned clauses of the Merchandise Marks Bill 1923, viz.:—Clause 1, relating to the marking of fruit and vegetables when imported. Clause 4, referring to the marking of fruit and vegetables when exposed for retail sale. Clause 12, the expression that "Fruit" includes Tomatos. At the instance of the Secretary, the meeting briefly discussed the method of marking, i.e., whether the expressions "imported" and "foreign" are preferable to the expressions "Empire grown" and "foreign grown," or vice versa. It was unanimously agreed to make no recommendation thereon at the moment, but to await introduction of the Bill.

With regard to the possible application by the Horticultural Trades' Association to the Board of Trade for a committee to be set up in respect of Rose trees, it was agreed that the chamber leave this in abeyance for the time being. It was explained that the foundation of the "case" was the preparation of statistics which would take considerable time.

In connection with the Nicotine Insecticides and the Poisons Schedule, the proof of the "case" recently submitted to the Ministry of Agriculture by the Insecticides Section was laid before the meeting. This "case" emphasized the serious difficulties created by the recent amendment to the Pharmacy Acts placing Nicotine Preparations in Part 1 of the Poisons Schedule. The Ministry had been asked to give assistance in obtaining the exclusion of nicotine preparations containing not more than three per cent of pure nicotine from the Schedule. Mr. Stiff, a member of the recent deputation to the Ministry, answered questions raised by members. The meeting agreed to the principle involved in the "case," and on the motion of Mr. E. C. Boughton, seconded by Mr. Geo. Monro, the Insecticides Section was asked to proceed further in the matter.

The Rating and valuation Bill recently issued, and which is exceedingly long and complex, was examined with a view to ascertaining whether there was anything in it prejudicing the horticultural industry, also whether any amendment could be reasonably suggested in order to correct anomalies or to obtain justifiable concessions. The Committee had the valuable assistance of Mr. J. B. Slade, well-known as an authority on Rating and Valuation, who gave an interesting criticism of the Bill. Members agreed that the principles of Rating reform embodied in the Bill were desirable. There were a few points discussed regarding the application of the Bill and deeply concerning the industry, such as the quarter easement enjoyed under the Public Health Act 1875, proper allowance from gross to net, and the possibility of land under glass being classed as agricultural land. The discussion as to this Bill was of necessity a preliminary one, and Mr. Slade kindly promised to undertake certain investigations and report in due course.

Obituary.

Arthur J. Pope.—Yorkshire gardeners will learn with regret that Mr. Arthur J. Pope passed away at Leeds Infirmary on Friday, May 22, after a long illness. The remains were interred at Gargrave on the 25th ult. Mr. Pope, who was gardener at Gargrave House, Leeds, for twelve years, was a most unassuming man, but ever ready to place at the disposal of younger members of the craft the results of his varied experience. He never spared himself in his work for others, and was the friend of and general adviser to the inhabitants of the large village of Gargrave. He was the hon. treasurer of the Gargrave show, and, as a result, of his experience and valuable help, the show made great progress during recent years. Mr. Pope belonged to the Ancient Order of Buffaloes, and the members of his lodge were present in large numbers at the funeral service; indeed, the whole of the village was in mourning, that it was quite evident the villagers realised the loss of a personal and valued friend. Mr. Pope leaves a widow and two grown-up sons to mourn his loss. *T. B.*

Pierre-Louis Lévêque.—The death occurred on May 11, at the advanced age of 87 years, of M. Pierre-Louis Lévêque, the veteran Rose grower and horticulturist of Ivry-sur-Seine. He was one of the best known growers of the Paris district, and besides Roses, Carnations occupied his attention to a considerable extent. Although his time was largely occupied with his own business he became prominent in local affairs, and was first magistrate at Ivry, as well as a Member of the Conseil Général de la Seine.

ANSWERS TO CORRESPONDENTS.

Grapes diseased: *A. E. L.* and *E. C. L.* The berries are affected with spot disease, caused by the fungus Gloeosporium ampelophagum. Spray the vines and the bunches of Grapes with liver of sulphur at a strength of half-an-ounce in two gallons of water, or dust flowers of sulphur on the leaves and bunches, and again at an interval of ten days. Next winter, when the vines are dormant, spray the rods with iron sulphate in solution.

Names of Plants; *W. H.* Justicia carnea. *L. F.* Gaultheria Shallon. *F. I.* Camassia esculenta. *J. A. C.* 1, Colutea arborescens, Bladder Senna, native of Mediterranean region; 2, Coronilla Emerus, Scorpion Senna, native of Central and South Europe. *R. F.* 1, White Rhododendron, Cunningham's White; 2, Red Rhododendron, a hybrid, most probably a seedling without a name. *W. F. F.* The Rhododendron flowers you send are those of the variety Lady Alice Fitzwilliam. This variety is increased by cuttings and layering. It is usually cultivated in a compost of sandy peat, but will thrive in a light, loamy soil, containing no lime, to which may be added a fair proportion of leaf-mould and peat. The large-leaved Rhododendrons of the Pink Pearl type are increased by layering, and by grafting on seedling Rhododendron ponticum, with a stem about the thickness of a pencil.

Communications Received.—A. Ltd.—E. P. D.—F. H. H.—A. G.—H. B. M.—A. E. L., thanks for 1/- for R.G.O.F. Box.—W. E. Y.

GARDENING APPOINTMENTS.

Mr. W. Durrant, for the past five years Gardener to the late Sir Hugh Thomas, Castle Hall, Milford Haven, Pembrokeshire, as Gardener to R. Q. Wilson, Esq., Brookland Hall, Welshpool. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.)

Mr. J. G. Gillies, for nearly three years Gardener to the Rev. Harold Brownlow, Cheriton Rectory, Alresford, Hampshire, as Gardener to W. F. Shedden, Esq., Park House, Moxhull Park, Wishaw, Erdington, near Birmingham.

MARKETS.

COVENT GARDEN, Tuesday, June 2nd, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldii ...	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Boronia heterophylla, 48's per doz.	21 0–24 0
Cacti, per tray,	
—12's, 15's ...	5 0– 7 0
Crotons, per doz.	30 0–45 0
Cyrtomium ...	10 0–25 0
Erica, 48's per doz.	21 0–30 0

	s. d. s. d
Erica magnifica, 48's per doz. ...	24 0–30 0
—coccinea, 48's per doz. ...	21 0–24 0
— —60's per doz.	8 0–10 0
Hydrangea	
White, 48's per doz.	18 0–30 0
—Pink, 48's per doz.	18 0–24 0
—Blue, 48's per doz.	30 0–48 0
Marguerites, white, 48's per doz. ...	15 0–18 0
Mignonette, 48's per doz. ...	15 0–18 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia ...	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's ...	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 0
Rhodanthe, 48's per doz. ...	12 0–15 0
Roses, Polyantha, 48's per doz. ...	18 0–24 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun. ...	12 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays ...	1 6– 2 6
short ,, ...	0 9– 1 3
—Sprengeri, per bun.	
long sprays ...	1 6– 2 0
med. ,, ...	1 0– 1 6
short ,, ...	0 4– 1 0
Carnations, per doz. blooms ...	3 6– 5 0
Cornflower, per doz. bun ...	4 0– 6 0
Croton leaves, var. doz. leaves	0 9– 2 6
Fern, French, per doz. bun. ...	0 9– 1 3
Galax, American, green and bronze, per doz. bun. ...	— 1 0
Gladiolus, Blushing Bride, per doz. bun. ...	18 0–24 0
—White, per doz. bun	15 0–18 0
—Peach Blossom, per doz. bun. ...	18 0–21 0
Gypsophila, white, doz. bun. ...	12 0–15 0
Iceland Poppies ...	6 0– 7 0
Ixia, red, doz. bun.	3 0– 5 0
—mixed, doz. bun.	3 0– 4 0
Lapagerias, per doz. blooms ...	3 6– 4 0
Lilium speciosum rubrum, long, per doz. blooms	— —
—short ,, ,,	— —
Lilium longiflorum long, per doz. ...	4 0– 5 0
Lily-of-the-Valley, per doz. bun. ...	15 0 24 0
Narcissus—	
—Double White, per doz. bun. ...	7 0– 9 0
Nigella, Blue, per doz. bun. ...	12 0–15 0
Orchids, per doz.	
—Cattleyas ...	24 0–36 0
—Cypripediums ...	5 0– 7 0

	s. d. s. d.
Paeonies, White per doz. bun. 6's	18 0–24 0
—Pink, per doz. bun. 12's ...	15 0–18 0
—Red, per doz. bun. 12's ...	15 0–18 0
Pyrethrum	
Double White, per doz. bun. ...	7 0– 8 0
—Double Pink, per doz. bun. ...	6 0– 8 0
—Single Red, per doz. bun. ...	5 0– 7 0
—Single Pink, per doz. bun. ...	5 0– 6 0
Richardias (Arums) per doz. ...	5 0– 6 0
Roses, per doz. blooms, Richmond	2 6– 4 6
—Liberty	2 6– 4 6
—Madame Butterfly	2 6– 5 0
—Mme. Abel Chatenay ...	2 6– 3 6
—Melody	3 0– 4 0
—Molly Sharman Crawford ...	2 6– 4 0
—Niphetos ...	2 6– 3 6
—Ophelia	3 0– 4 0
—Sunburst ...	3 0– 4 0
Gardenias, per box, 12's, 18's...	4 0– 6 0
Smilax, per doz. trails	3 0– 3 6
Spanish Iris, per doz. bun.—	
—Blue	18 0–30 0
—Mauve	18 0–24 0
—White	18 0–24 0
—Yellow	24 0–36 0
Statice, mauve ...	5 0– 6 0
Stephanotis, per 72 pips	3 0– 3 6
Stock, English white	9 0–18 0
Sweet Peas, per doz. bun. ...	8 0–15 0
Violas, per doz. bun.	1 0– 1 6
French Flowers—	
Anemone, St. Brigid	2 6– 5 0
Marigolds, per doz.	4 0– 5 0

REMARKS.—All cut blooms were in good demand during the whole of last week and all supplies went out freely, especially on Friday and Saturday. Prices advanced for most subjects, especially for Carnations, which were below the requirements on Saturday, and late buyers could not be supplied. Similar remarks apply to white Roses, but coloured blooms were more plentiful; in spite of the increased prices the supplies of Roses were cleared very early. All scarlet and white blooms, such as Paeonies, Double-White Narcissus, and Lilium longiflorum, met with an exceptionally good demand. Larger supplies of Pyrethrums are expected this week and they should now include the double-white sort; on account of Double-White Narcissus finishing this Pyrethrum should be in demand. There are no new subjects to record this week. Prices are expected to remain firm for a few days; large consignments are still being despatched to the provinces.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
New Zealand—	
—Cox's Orange Pippin	25 0–28 0
—Jonathan ...	18 0–20 0
—Dunn's Seedling	16 0–18 0
Tasmanian Pears	4 0–12 0
Tasmanian—	
—Cox's Orange Pippin	18 0–25 0
—Jonathan ...	14 0–18 0
—Ribston Pippin	16 0–17 6
—Cleo	16 0–18 6
—Others	16 0–17 0
Bananas	16 0–27 6
Cherries, French,	
per box	1 3– 2 0
per crate ...	8 0–12 0
Figs (Forced) doz.	3 0–12 0
Gooseberries, per lb.	0 4– 0 6
Grapes—	
—Belgian	2 6– 3 0
—English—	
—Hambro, per lb.	2 6– 4 6
—Muscat	10 0–12 6
—South African—	
—Colmar	10 0–12 0

	s. d. s. d.
Grape Fruit, Cuban	35 0–40 0
—Jamaica... ...	35 0–40 0
—Florida, finest...	35 0–42 6
Lemons, Messina, per box... ...	9 0–13 0
—Murcia	14 0–18 0
Melons (Forced)	2 6– 7 0
Oranges, Jaffa ...	16 0–18 0
—Spanish—	
—300's	20 0–30 0
—360's	18 0–30 0
—504's	18 0–25 0
Peaches, English per doz. ...	10 0–24 0
Pears, South African—	
—Keiffer	3 0– 3 6
—Josephine de Malines	5 0– 5 6
—Winter Nelis ...	3 0– 5 6
—Doyenné du Comice	6 0– 8 0
Pines	3 6– 4 6
Strawberries, per lb.	3 0– 7 6

Vegetables: Average Wholesale prices.

	s. d. s. d.
Asparagus—	
—Eversham ...	3 0– 5 0
—Special	6 0–18 0
—Devon	8 0–10 0
Beans, Guernsey, per lb.	1 6– 2 0
—Worthing ...	1 6– 2 0
Beets, per cwt....	5 0– 8 0
Cabbage, per tally	7 6–10 0
Canary Island Tomatos ...	20 0–30 0
Cauliflowers, per doz.	2 0– 3 0
Carrots, new, per doz. bun. ...	6 0– 8 0
Cucumbers, per doz.	6 0– 6 6
—Flats, 36's, 42's	18 0–22 0
Dutch Onions ...	11 0–12 0
Greens, best, per bag	4 0– 5 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundle	2 0– 2 6
Lettuce per doz.	— —
—Cos	8 0– 9 0
—Dutch, per crate	8 0–10 0
Mushrooms, cups	2 0– 2 6
—broilers	1 0– 1 6
Marrows, doz....	10 0–15 0
Mint, Forced, per doz.	2 0– 6 0

	s. d. s. d.
Onions, Valencia, per case ...	14 0–16 0
—Egyptian, per bag	11 0 12 0
—English, per cwt.	12 6–14 0
—Spring per doz.	2 6– 3 0
Parsnips, per cwt.	3 0– 4 0
Peas, English per lb.	1 0– 2 0
—French, per cane	2 0– 6 0
—Guernsey forced per lb.	1 0– 1 6
Potatos, Canary Island	18 0–20 0
Potatos, per ton—	
—Dunbar ...	240 0–260 0
—King Edward	200 0–240 0
—Others ...	90 0–160 0
—New Guernsey lb.	0 2½ 0 3
—Jersey	0 2½ 0 3
—Scilly	0 2½ 0 3
—Spanish, new, per cwt. ...	— 20 0
Radishes—	
—Round	1 0– 2 0
Rhubarb, per doz.	7 0– 9 0
Spinach, per bushel	3 0– 4 0
Tomatos, English, per lb.—	
—Pink	9 0–10 0
—Blue	8 0– 9 0
—White	8 0– 9 0
—Pink White ...	9 0–11 0
—Guernsey ...	9 0–10 0
Turnips, new, per doz. bun. ...	8 0–10 0

REMARKS.—Trade has been fairly brisk following the holiday, when the usual congestion of produce over the week-end had the effect of lowering prices. Fruits from South Africa, such as Grapes and Pears, are in steady demand. Apples from Australia, New Zealand, and Tasmania continue to go out at a good price level. Gooseberries from the West of England and Kent have sold very well. Cherries from France have been in variable condition but have met a good demand. Choice fruits, such as Peaches, Grapes, Melons and Strawberries are a good business, the demands of the "London Season" being such that good prices are maintained. Tomatos from the Lea Valley and Worthing have developed rapidly, and the lower quotations should encourage a firm demand. Cucumbers are a good trade. Asparagus, mainly from Evesham, has sold well, except for a slight set-back just before the holiday, for special quality heads. Salads are not plentiful and are selling well. French Beans, Peas, and new Potatos are selling freely, the last commodity being offered at lower prices. Green vegetables are plentiful and cheap.

GLASGOW.

THIS was a good week in the cut-flower market, business being more active than it has been of late, and prices were firm all round. Darwin Tulips grown at the new nurseries at Lochearnhead were an outstanding feature. Extra fine blooms of Clara Butt, Baronne de la Tonnaye, Farncombe Sanders, and No. 1 Pink made 1/- to 1/6 for 6's, while Pride of Haarlem averaged 8d. to 1/-. Other Tulips realised up to 1/- per dozen. Paeonies were plentiful all the week, and ranged from 1/- to 2/- per dozen blooms. Supplies were badly packed in large boxes containing two dozen bunches, and prices suffered in consequence. Irises found a ready sale at 1/9 to 2/6 per dozen, and 6d. to 8d. for 6's, while Pheasant Eye Narcissi made 3/6 to 5/6 per dozen, and Double White 5/- to 8/-. Buyers conceded from 4/- to 5/- for special blooms of May Day, Lady Northcliffe, Aviator, and Enchantress Carnations, while medium quality blooms realised 2/6 to 3/6. Lilium longiflorum (Harrissii) were exceptionally cheap at 3/6 to 4/-, and Sweet Peas kept steady at 9d to 1/3 per bunch. Roses showed little change in quotations, Richmond averaging from 2/- to 3/6, Madame Butterfly and Ophelia 3/6 to 4/6, Madame Abel Chatenay 3/6 to 5/-, and Mrs. H. Stevens 2/6 to 3/6. Red and white Pyrethrums averaged 3/- to 4/- per dozen bunches.

There was no shrinkage in supplies of bedding plants, and prices, with few exceptions, continued unremunerative. Stocks, Asters, Calceolarias, and Antirrhinums ranged from 1/- to 1/3 per box, Lobelia 1/6, Gladioli 4/- per dozen, Coltness Gem Dahlia 4/- to 5/-, Begonias 6/-, Echeveria, 3/- per box, Violas 1/3 to 1/6, Alyssum and Nemesia 1/-, Marigolds 1/- to 1/6, Paul Crampel Geraniums 6/- per dozen, and Nasturtiums (named) 3/- per 100.

Pot plants made good prices; Hydrangeas were worth up to 4/- each for large and 1/9 to 2/3 for small plants; Aspidistra, green, 1/- to 1/6, variegated 1/9; Marguerites 1/3 to 1/6, and Pelargoniums 1/6 to 3/-.

The tone of the fruit market was very firm, especially for Oranges, which further advanced, 420's selling at 39/- to 46/- per case; 320, 23/- to 26/- half case; and 200, 240, and 300, 25/- to 30/- for Burriana fruit; while Murcias ranged from 30/- to 36/- all grades. English and Scotch Strawberries were round 6/- to 7/- per lb., but 10/- was paid for a small consignment from Drumlanrig Castle Gardens. Green Gooseberries returned 6d. per lb., and French Cherries 2/6 to 3/6 per box; Peaches sold at 16/- to 24/- per dozen, Black Hamburgh Grapes 3/6 to 4/6 per lb., Australian Grapes 16/- to 18/- per case, Cape Grapes 12/- to 14/-, Grape Fruit 30/- to 32/-, Lemons 12/6 half case. Australian Apples are arriving in prime condition; Jonathan made 20/- to 22/-, Cleopatra, Ribston Pippin, Munro's Favourite and London Pippin 20/- to 21/-, New Zealand Apples realised 18/- to 22/-. African Pears were in smaller supply, and limited to three varieties, Forelle selling at 5/6 to 6/-, Winter Nelis 5/6 to 7/-, and Glou Morceau 6/- to 7/-, while Australian Beurre Bosc averaged 7/6 to 10/-, and Williams's Bon Chretien 12/6 to 16/-.

Conditions in the vegetable department remained good. Scotch Tomatos brought 1/6 to 1/10 per lb., English and Guernsey 1/3 to 1/4, and Teneriffe 32/- to 40/- per bundle; Cucumbers (home), 6/- to 9/- per dozen; Dutch 4/- to 6/-; Asparagus 5/- to 6/6, French Beans 1/9 to 2/- per lb., Carrots 1/- to 1/2, Turnips 1/4 to 1/6, Mint 4d. to 8d. per bunch, Teneriffe Potatos 16/- to 18/- per case, and Lettuces 1/6 to 2/6 per dozen.

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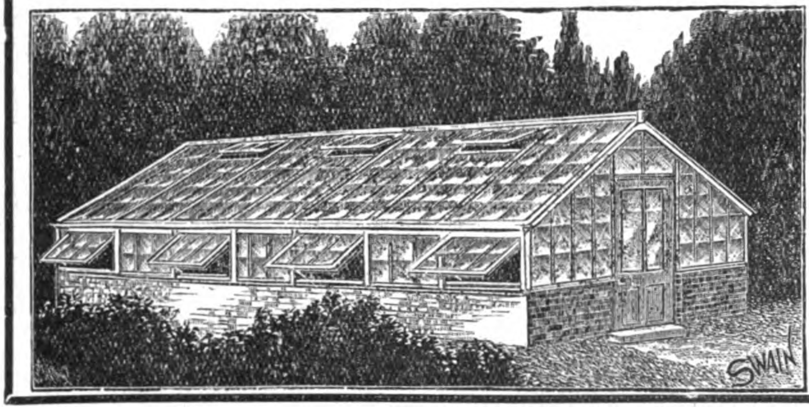

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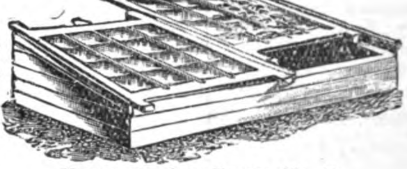

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THE
Gardeners' Chronicle

No. 2007.—*SATURDAY, JUNE* 13, 1925.

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Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 59·3°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, June 10, 10 a.m. Bar. 30·5, temp. 73°. Weather, Sunny.

Mendel's Experiments in Plant Hybridisation.[*]

The Harvard University Press has done well to republish the translation of Mendel's account of his famous and far-reaching researches on the hybridisation of plants. Mendel's original paper in which the results of his experiments are contained was published in 1865, and many years elapsed before the discoveries which it announced gained the attention of the scientific world. Now that the essentials of them are universally known and all but universally accepted, it is but right that the original statement should be readily accessible to everyone. It is well worth reading, not only by the student of genetics, but by anyone who is an amateur of genius. No one who reads the introduction with attention can fail to perceive that Mendel was indeed a remarkable man, and knew how to go to the root of the matter. After referring to the work of his predecessors, Mendel points out in his introduction that in spite of the numerous experiments in hybridisation which had been made before he began his work, no one had experimented to such an extent or in such a way as to make it possible to determine the number of the different forms of hybrid offspring; nor had anyone arranged these forms according to the generation—first, second, or later—to which they severally belong, nor had anyone investigated the statistical relations between them. In this sentence he announced his programme of work and casually, as it were, revealed the genius of his mind; for, as Bateson observes in a footnote: "it is to the clear conception of these three primary necessities that the whole success of Mendel's work is due." Mendel's account of the reasons which led him to begin his investigations on heredity with the common Pea is well worth reading. It shows him to have been a good observer. He had noted that plants of the genus Pisum are self-fertile, rarely cross in nature, and that artificial pollination is not difficult to effect and is always successful. The preliminary experiments which Mendel made showed that, except in certain cases due to mixing, the different commercial strains of Peas—thirty-four in number—bred true to type. Genius knows not only how to go to the root of the matter, but also how to keep to the point, and so we find Mendel not bothering over much as to an exact classification of the varieties. What he wanted was races which differed constantly from one another by certain easily-observed characters, and having found them, he proceeded to his experiments. The underlying idea of the experiments is clearly stated. It was to discover how a given character which distinguishes one race from another behaves in successive generations of the cross between the two races. The pairs of characters which Mendel selected for observation included shape of seed (round or wrinkled), seed colour (green or yellow), colour of seed coat, length of stem (tall or dwarf), and certain others. "*La genie c'est une longue patience*," and hence, as the present memoir shows, Mendel undertook the laborious task of making over two hundred cross-pollinations of the Peas, and of them some were made one way with one plant as the female parent and others the other way. To achieve his end, Mendel examined in all some ten thousand Pea plants. When he came to describe the results, he notes, first, the fact that many characters of the hybrid are intermediate between those of the parents. In some cases, however, the character of one parent is preponderant over that of the alternative character of the other parent. This latter state, which he named "dominance," occurs not infrequently in the Pea; tallness is dominant to dwarfness, and so on. Continuing his experiments, Mendel observed the re-appearance in the second generation of the recessive character. Thus, in the case of seed shape, from 253 hybrids he obtained an F_2 generation of 7,324 seeds. Of this number, 5,474 were round and 1,850 wrinkled—a ratio of 2.96 : 1. In the case of seed colour, the F_2 comprised 8,023 seeds, of which 6,022 were yellow and 2,001 green—a rate of 3.01 : 1. Bringing together all his results, he found that the average ratio in F_2 of dominant to recessive in the case of a simple Mendelian pair of characters was 2.98 : 1, and his mathematical acumen enabled him to perceive that this ratio means 3 : 1, with chance playing pranks with comparatively small numbers. Dominance, segregation, and independent assortment of factors—all were discovered and formulated by Mendel. As a result of the foundations which he laid, those who followed after him have been able to build with remarkable speed and sureness a stable science of heredity. Anyone who realises what this means, not only to science, but also to human progress, must surely be prepared to expend the few pence necessary to learn the simple means and single eye with which genius works.

A Cherry Exhibition.—A novel exhibition in the form of a Cherry Show is to take place from July 4 to July 6 in Altenburg, Thuringen, Germany. The idea is to popularise the German Cherries and increase their use, besides helping growers to know which varieties best combine rapid and easy development, good fruiting qualities, and produce of a marketable kind. Transport qualities are to be tested by sending Cherries in different kinds of packages to the exhibition, their condition on arrival being carefully observed. The exhibition, which is being held under the auspices of the local agricultural authorities, would appear to contain great possibilities of usefulness both to growers and public.

Legacy to a Gardener.—The late John Primrose, Esq., Arundel House, Maxwelltown, Kirkcudbrightshire, who died recently, bequeathed an annuity of £75 per annum and free house to Mr. James Allan, his gardener, who had been in his employment for many years.

Honour for Prof. F. O. Bower.—Emeritus Professor F. O. Bower, who has occupied the Chair of Botany in the Glasgow University for many years, is on the list of those to whom the Senate of the University has resolved to offer the Honorary Degree of LL.D.

"Mothers' Day" in Holland.—This year, for the first time, "Mother's Day" was celebrated in Holland on May 20. For some years the institution has flourished in America, the custom of sending flowers to one's mother on one particular day in the year having become fairly well established. Needless to say, the impetus in both countries has come from the nurserymen's associations, who stand to gain enormously by the extra sales of flowers thus occasioned.

Soil Survey in Scotland.—A new departure in research work will shortly be undertaken by the Board of Agriculture in Scotland in co-operation with the International Education Board of America, which is provided with funds from the Rockfeller Foundation. This International Board, which was founded for the purpose of co-operating with foreign institutions and agencies, is at present concentrating its efforts in two fields, viz., the advancement of scientific research and the promotion of agricultural science and practice. In the United States the survey of soils is widely organised, and as it was recognised that it had reached a state of development far beyond anything achieved in this country, the Board of Agriculture provided a travelling scholarship to enable Dr. Ogg, now on the staff of the East of Scotland Agricultural College, to study the system of soil surveys in America. Following on the report made by Dr. Ogg, the Board of Agriculture conferred with Dr. Wickliffe Rose, the President of the International Board, and the first result of the conference is the organisation of an educational soil survey in Scotland. Advised by Professor Lyon, of Cornell University, the Board of Agriculture for Scotland has engaged the services of a distinguished soil surveyor, who is a member of the staff of the Michigan Agricultural College. He will begin his duties next month, and in a preliminary survey of a part of East Lothian from the sea coast near Longniddry to the Lammermoors he will

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[*] *Experiments in Plant Hybridisation.* By Gregor Mendel. Harvard University Press, 1925. Published in the British Empire by H. Milford, Oxford University Press. Price 1/6 net.

be accompanied by Messrs. Ogg, Monie, and Newlands, the soil advisory officer of the East, West, and North Agricultural Colleges. The summer and autumn months are to be spent partly in East Lothian and partly in the west and north of Scotland, for studying the possibility of applying American methods to Scottish conditions. It is expected that one or two soil experts from English centres will join the party.

Centenary of R. D. Blackmore.—The centenary of the birth of this celebrated novelist occurred on the 7th inst., and although he will be remembered best by most people for his novel, *Lorna Doone*, he was a noted gardener, and horticulturists—especially pomologists—will always hold his memory in high esteem because of his connection with their craft. For many years he identified himself actively with the Royal Horticultural Society and was a member of the Fruit and Vegetable Committee. It will be remembered that Blackmore retired to Teddington to take up the pursuit of market gardening; Dr. Robert Hogg had a high opinion of his knowledge of fruits and references to the novelist's opinion are freely interspersed throughout the notes on the varieties of Pears in the *Fruit Manual*. A portrait of Mr. Blackmore was given in the obituary column of *The Gardeners' Chronicle*, January 27, 1900.

A Hybrid Meconopsis.—We learn with interest that a hybrid has been raised between Meconopsis simplicifolia and M. grandis. So far as we are aware this is the first hybrid Meconopsis that has been raised, and the raiser is Mr. F. C. Puddle, gardener to Lady Aberconway and the Hon. H. D. MacLaren, Bodnant, Tal-y-cafn, North Wales. That the hybridist has been successful is proved by the shape of the leaves and by the fact that although Meconopsis simplicifolia is the seed parent, the leaves and more than one flower appear on the stem in some of the plants. The first flower on the best plant of this hybrid was six inches across, a most brilliant blue and carried on a stem over four feet high. The third flower, equally fine in colour, but much smaller than the first, was brought to the meeting of the Royal Horticultural Society by Mr. MacLaren on Tuesday last, but as it had suffered a good deal during its journey from North Wales, it was not exhibited before the general public. It is proposed to call this new plant Meconopsis hybrida F. C. Puddle.

The R.H.S. Amateur Flower Show.—Owing to the difficulty which amateurs find in deciding in advance whether their flowers will be at their best at the date of the Show, the Council of the Royal Horticultural Society has decided to postpone the latest date for the acceptance of entries until Saturday, June 20.

The late Mr. C. Harman Payne's Library.—The interesting horticultural and floricultural library formed by the late Mr. C. Harman Payne will be sold by auction on June 22, 23, and 24, by Messrs. Sotheby, Wilkinson and Hodge, of 34, New Bond Street London, W.1. Mr. Harman Payne was especially interested in brochures concerning florists' flowers, and as many of these are very scarce, there will probably be a keen competition by buyers to possess them.

Damage by Hailstorms in Belgium.—The 19th of May will long be remembered as a day of disaster by the growers of the Liege district of Belgium, for during the afternoon there were heavy storms of hail, which did an incredible amount of damage, not only to glass houses and frames, but also to growing crops, both in the houses and in the open. The loss is estimated to be not less than several hundreds of thousands of francs, and an appeal is being launched by one of the Belgian gardening papers for subscriptions in aid of the worst victims of the misfortune.

Mr. William Dallimore.—The new President of the Kew Guild was intended for the nursery business, and his early training had that end in view. He spent three years with Mr. Charles Rylance, of Aughton, Ormskirk, who was at that time one of the principal growers and exhibitors of Pelargoniums and Dahlias in this country. Later, he served with Messrs. James Dickson and Sons, Chester, remaining there for two-and-a-half years to make a fuller acquaintance with general nursery work, but particularly the propagation of plants. From Chester Mr. Dallimore went to Calveley Hall, Tarporley, in order to obtain a knowledge of private garden requirements. In 1891 he went to Kew, where he worked for some little while in the tropical propagating department, but was soon chosen to work out the system of tree pruning still practised at Kew, which he did under the direction of Sir William Thiselton-Dyer, then Director, and Mr. W. J. Bean, the present Curator. For three-and-a-half years he was the Arboretum Propagator at Kew, and then took charge of the Temperate House, where he carried out the planting of the Mexican and Himalayan wings of this huge structure and partly renewed the beds in the central portion of the building. Later, he was appointed to the charge of the Arboretum, a position he held for about eight years, until, in 1908, he was appointed Assistant in the Museums, a position he still holds. Mr. Dallimore's principal work is in connection with forestry and problems relating to timber production. He formed the present British Forestry Museum, and by invitation of the several committees and with the permission of the Director and Ministry of Agriculture he acted as honorary organising secretary to a Home Forestry Section in the 1914 exhibition at Shepherd's Bush, and in a similar capacity for the Timber Exhibition held in Holland Park in 1920, and for the Forestry Section of the British Empire Exhibition at Wembley last year. Mr. Dallimore is a frequent contributor to these columns, and has written the tree and shrub sections for several horticultural works. He is also the author of a book on *Trees and Shrubs* in a series of horticultural works published by Messrs. Cassell and Co.; and of *Holly, Yew and Box*, published by John Lane, while in collaboration with Mr. A. B. Jackson he produced a *Handbook of Coniferae*, published by Arnold and Co. Although Mr. Dallimore is an extremely hard worker, he finds time to encourage and assist the young men who come to Kew for their training, and is particularly pleased when he finds a young man who takes a keen interest in trees and shrubs.

MR. WM. DALLIMORE.

Jubilee Show of Montrose Horticultural Society.—The Montrose Horticultural Society has received intimation of three cups to be awarded at its Jubilee Flower Show. These are presented by Mrs. R. W. Adamson, The Links; Miss I. K. Gordon, Links Lodge; and Sir James Warrack, K.B.E. The last was admitted to the freedom of the Burgh last year and the gift of his cup is offered through Provost Foreman, President of the Society.

Cultivation of Sugar Beet in Scotland.—Over a year ago the Scottish Council of Agriculture appointed a committee to enquire into the possibility of developing the Sugar Beet industry in Scotland and the report which has just been issued discusses such questions as factories, government aid, yield, and prices. With the view to establishing a factory in Scotland, the Anglo-Scottish Beet Sugar Corporation, Ltd., whose headquarters are at Glasgow, investigated the possibilities of growing the crop in Scotland. The results of the experiment prove that Beets can be grown in Scotland, but more knowledge and experience of the methods of cultivation are required by the grower before the enterprise can be considered ready for commercial development. The Committee states that the best soils for the growing of Sugar Beet are deep loam well supplied with lime and organic matter, but any free working soil adapted for growing roots, Barley, and Potatos should grow Beet well and that it could be used as a cleansing crop in place of Potatos, Mangolds, Turnips or Swedes. In Scotland the best time for sowing is during the last week of April and the first week of May, but the report urges that careful systematic experiment is still required. The chief reasons put forward for the development of the industry in Scotland are:—(1) That experiments have proved that the crop can be grown as well as on the continent; and (2) that under present fiscal conditions the crop could be substituted for other crops with financial benefit. The report also emphasizes the contribution which the industry would make in reducing unemployment and points out that the machinery at the Colwick factory was made in Glasgow, while the thousands of sacks used in the English factories came from Dundee.

Prominent Leith Merchant's Jubilee Celebration.—Mr. David Bell, J.P., Chairman and Managing Director of the firm of David Bell, Limited, Wholesale Seed Merchants, Leith, entertained his employees and their wives, the guests numbering 150, at the Masonic Hall, Forth Street, Edinburgh, on the 29th ult., to celebrate his completion of fifty years in the seed trade. Those present included Provost and Mrs. Carmichael, of Coldstream, and Mr. James Elder, of Haddington, these gentlemen having been fellow apprentices with Mr. Bell in Messrs. Cross and Donaldson's from 1875 to 1880. After tea Mr. Bell welcomed the guests and in the course of his remarks drew attention to the good feeling that has always existed between himself and the staff, as shown by their long service. He, himself, commenced business on his own account thirty-eight years ago, and quite a large proportion of his employees have been with him from thirty-three to thirty-seven years, the average length of service of twenty-three of the senior employees being twenty-nine years. A most enjoyable concert followed, songs and recitations being given by Miss V. C. Bennett, Miss Ruth Fairweather, Mr. John Mathewson and Mr. J. C. Maclure, and musical selections were also rendered by an efficient orchestra. At intervals in the programme two interesting presentations were made on behalf of the employees. The first took the form of a suitably inscribed gold watch to Mr. Bell and a diamond brooch to Mrs. Bell, and the second consisted of a case of silver and mother-of-pearl fruit knives and forks to Mr. David Bell, Junior, on the occasion of his forthcoming marriage. These presentations were made by senior members of the staff, Mr. Finlay Mackenzie representing Leith, Mr. A. Gordon Clarke the Belfast Branch and Miss E. Beveridge, the lady employees. The speeches admirably voiced the feelings of all the staff for Mr. Bell and showed unmistakably the high esteem in which he is held. Mr. Carmichael and Mr. Elder introduced many reminiscences of old times in the seed trade, which were both interesting and amusing. Following a hearty vote of thanks to Mr. and Mrs. Bell for their hospitality, an enjoyable dance programme was carried through, which completed a memorable evening.

Chrysanthemum Show at Johannesburg.—Mr. R. Philips, Superintendent of Parks at Johannesburg writes: "It is not often we see any mention of Johannesburg in the pages of *The Gardeners' Chronicle*, so I send you a photograph (Fig. 183) of a group of Chrysanthemums and Dahlias which occupied a prominent position at our recent annual exhibition of the Transvaal Horticultural Society. The Chrysanthemums and Dahlias shown were all good and included many of the latest varieties of each. The photograph may be worth reproduction, and if so it will please our people and also interest British growers who may like to know what we are doing out here."

Appointments for the Ensuing Week.—Tuesday, June 16: Winchester Horticultural Society's meeting. Wednesday, June 17: York Flower Show and Gala (3 days). Friday, June 19: Manchester and North of England Orchid Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Exhibition at Chiswick.*—The gem of the Chiswick Exhibition on Saturday last was the purple Camarote (Camarotis purpurea) produced by Mr. Holford's gardener, Bassett. In this instance a poor and undervalued plant was shown to possess a degree of beauty which is hardly surpassed by any of its order; for what it wanted in breadth of colour it made up in gracefulness of form. To show that it could become a living pyramid of green and purple, most beautifully blended, was a great gardening achievement, and has for ever rescued a charming species from undeserved neglect. The crown of the exhibition, set with many gems, was a collection of Orchids from Mr. Rucker's garden. Although it contained nothing so fine as the Camarote, yet it was studded with brilliants of the first water. No one ever before saw such glowing colours on these matchless jewels. The lemon-scented Toothtongue (Odontoglossom citrosmum) had exchanged its pallid hue for a ruddy glow that would have done no injustice to a Rose; the lip of the intermediate Cattleya rivalled the tint of Jung Bauhauder's amethysts; and no sapphire that glitters on his turban was more rich than the stain in the centre of Beauty Dendrobe's lip. How these things are to be done it boots not here to tell; it is clear that other growers still want the crowning art of throwing into their specimens such colour as gleamed beneath the skin of Mr. Rucker's favourites. But unusual colour was not on this occasion confined to flowers only. The Marquess of Waterford's Irish Peaches were as perfect in their way as the London Orchids. No summer sun ever could have given a deeper colour, or elicited a richer perfume. To the very stalk they were ripened thoroughly. Much honour to our old acquaintance Robertson, the Scotch gardener at Curraghmore; we only wish he had been an Irishman. *Gard. Chron., June 15, 1850.*

ALPINE GARDEN.

HYPERICUM REPTANS.

Many experts would include Hypericum reptans in the "hundred best alpines," for this St. John's Wort is a gem of the first water; a plant of surpassing grace, and one to be desired in every rock garden. It comes from the more temperate districts of Sikkim, and has been established in our gardens for a considerable number of years.

It is trailing in its growth, sending out long, prostrate branches, clad with many charming emerald-green leaves, which in spring and autumn become tinted with yellow and crimson. Planted so that it can trail over a stone, it will form a veil of delightful verdure. In summer and autumn it produces fat buds, which are deep crimson on the exterior, but eventually open into large flowers of fine gold. They have been likened to those of the Dog Rose in point of size, and, although this is a slight exaggeration, it conveys some impression of the dimensions of the blooms. From the time it begins to bloom in summer until winter is well upon us flowers continue to appear, and it is a real delight to see them even when the frost has despoiled us of many of our favourite flowers.

Hypericum reptans is easily raised from seeds sown in pots under glass in spring or summer, or by cuttings struck under glass also. Seeds are quite freely ripened, and self-sown plants occasionally appear; the seed capsules frequently remain on the plants all the winter with the seeds within. While hardy in the accepted sense of the term, I have seen H. reptans occasionally lost in wet and changeable winters in an exposed place. It is so lovely that it is well worthy of a choice position in any rock garden, and will grow well in the usual compost employed there.

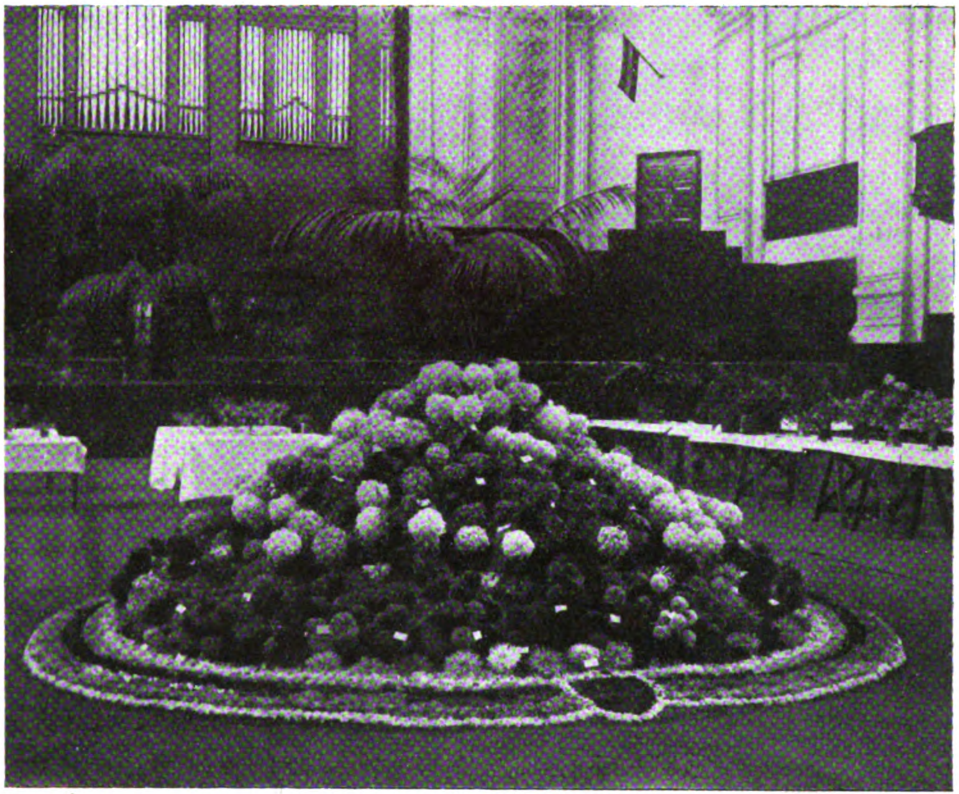

FIG. 183.—GROUP OF CHRYSANTHEMUMS AND DAHLIAS AT JOHANNESBURG SHOW.

PRIMULA WARDII.

Primula lovers have numerous disappointments in their efforts to cultivate some of these floral treasures. Too many of the plants are incapable of enduring the vagaries of our climate, and ultimately fail entirely. Happily, all are not the same, and some among the lovely introductions from China and Tibet may be cultivated with success without wintering them under glass. Of such is Primula Wardii. It absolutely justifies the encomiums lavished upon it by the late Mr. Reginald Farrer, whose wealth of vocabulary in floral description few can emulate. It is unnecessary, however, to spend much time and space in quoting that talented writer, or in entering upon a lengthened description of the plant. We have in Primula involucrata a plant with many points of resemblance, not least among these is its happiness under similar conditions. Both coolness and moisture are necessary to Primula Wardii, and in most gardens these conditions are not difficult to supply.

In its general appearance, too, P. Wardii may be likened to a glorified P. involucrata, with neat, little Daisy-like leaves and long, slender stems crowned with an umbel of rather larger flowers than those of P. involucruta, but of a bright pink with a white eye, and possessed of even more fragrance. This Primula will ultimately spread into a little mat of its leaves, adorned in the end of May and in June, and sometimes again in autumn, with its flowers. It is easy to increase by division, and seeds are freely produced, these germinating well, especially if sown so soon as they are ripe. I am informed that this is a plant which has often been known as P. sibirica chinensis, but it is now considered a true species, and one is gratified to think that it bears the name of Mr. Kingdon Ward, to whom we are deeply indebted for many floral acquisitions. *S. Arnott.*

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Odontoglossum.—Such plants as Odontoglossum grande, O. Insleayi, and O. Williamsianum will now be starting into growth after a long season of rest. As they are on the point of developing new roots from their last made pseudo-bulbs any repotting necessary should be attended to The plants grow best when afforded a slightly higher temperature than the cool house. Many of the dwarf-growing Odontoglossums, which include such members as O. Rossii, and its hybrids; O. Cervantesii, O. Humeanum and O. Oerstedii, that have recently passed out of flower, should also be given attention when the new roots begin to show at the base of the young shoots. These last-mentioned plants thrive best when suspended near to the roof-glass in the cool house.

Platyclinis filiformis.—This pretty species should be repotted after passing out of flower, and when fresh root action commences. This Orchid is best grown in pans and suspended from the roof-rafters in a shady position in a house having an intermediate temperature. When the plants have rooted freely in the new compost, liberal supplies of water should be given them; they should be sprayed frequently overhead, and on the undersides of the leaves all through their growing period, as a means of warding off attacks of red spider. P. uncata and P. glumacea should be afforded similar treatment.

Odontoglossum citrosmum. — This Mexican species will require repotting directly the flower scapes are removed. The plants should be placed in the Cattleya house in a light position near to the roof-glass in order to thoroughly mature the new pseudo-bulbs, otherwise it will be shy in producing flower-spikes the following spring. While in active growth, plenty of water should be afforded the roots, but when the new pseudo-bulb is matured, the plant should be given a long season of rest under cooler and drier conditions.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

The Rock Garden.—Many of the occupants of the rock garden are now passing out of flower and, except where seeds are wanted, all faded flower-stems should be removed to relieve the plant of the strain of carrying seed-pods. Keep the plants free from weeds and the surface soil frequently stirred, also watch fast growing subjects and prevent them from overgrowing their weaker neighbours. A large number of alpines may be raised from seed and now that the bedding plants are disposed of space may be found for dealing with this section. Many of the Androsaces, Aubrietias, Dianthi, Drabas, Linarias, Linums, Saxifragas, Violas, and a host of others may be raised from seeds sown at this time and the resulting plants will be found most useful for replenishing the rock-garden during the next planting season. The seeds should be sown in pots or pans in light soil and placed in a cold frame. It is most important that cool, moist conditions should prevail in the frame until the seeds germinate, hence a position on the north side of a hedge or building which is protected from direct sunshine is an advantage. So soon as the seedlings are large enough to handle they should be pricked off, gradually exposed to the light and grown on under open-air conditions.

Brompton Stocks.—These stocks are invaluable for producing a display during May and June. They require a long period of growth and the seeds should be sown between now and midsummer. Sow in a cold frame and shade until germination takes place, when plenty of air should be admitted and after a few days the lights removed entirely to promote short-jointed growth. When the seedlings are large enough to handle they may be planted out about one foot apart where it is intended to flower them.

Phloxes.—These showy herbaceous plants are shallow-rooting and on light, sandy soils, are amongst the first to suffer from the effects of drought. They should be given an abundance of water during dry periods and a liberal mulch of decayed manure.

Routine Work.—The most pressing work at this time is that of keeping the garden in good order. The edgings, whether of grass, Box, or other evergreens, need constant attention, as any raggedness immediately detracts from the general neatness. The importance of the frequent use of the Dutch hoe amongst growing plants at this season cannot be over-rated and every hour occupied in this work is time well spent. Besides keeping down weeds it saves watering by the prevention of evaporation, helps to control various soil pests by exposing their larvae and encourages sturdy, healthy growth in the plant.

PLANTS UNDER GLASS

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Begonias of the Gloire de Lorraine Section.—Cuttings of these Begonias may still be inserted for the provision of small plants for the winter. The earliest struck plants should be potted on as they may require this attention, growing them on in a fairly moist atmosphere and an intermediate temperature. Guard against over-potting, using at each shift pots only slightly larger than those from which the plants are being transferred. The several Begonias of this type are all valuable because of their exceeding floriferousness and compact, bushy habit. The variety Mrs. Peterson has, in addition to its beautiful flowers, lovely dark foliage with a metallic sheen, and this variety is especially effective in artificial light. Many growers experience trouble with these Begonias in the damping of the foliage, but this may be obviated by growing the plants in moderately dry atmospheric conditions and allowing the air to circulate freely amongst them.

Begonia Gloire de Sceaux.—Cuttings of this fine and vigorous Begonia inserted towards the end of the present month, may be grown into good specimens before winter arrives. Where space is available, the plants should prove valuable during January and February.

Seed Sowing.—Seeds of various winter-flowering subjects may now be sown. Browallia speciosa major, raised from seeds sown now, will flower during the winter, when this plant, with its pretty, blue flowers, is, possibly, more appreciated than during the summer. Impatiens Holstii is another useful winter-flowering subject, requiring, however, a rather higher temperature than Browallia. A warm greenhouse or mild stove temperature and a moist atmosphere suits it best. Seeds sown now should produce useful plants for next winter. Seeds of Trachelium coeruleum may also be sown now to provide flowering plants during early winter. For a spring display sow seeds of Cineraria in variety, as also Primula sinensis, P. stellata, and P. malacoides. The present is also a good time to sow seeds of Humea elegans to provide next year's flowering plants. To ensure good flowering specimens of Campanula pyramidalis during the summer of next year, plants with good plump crowns must be built up before the winter, and seeds should be sown now, or not later than midsummer.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Plums.—The fruits of the earliest varieties, such as Early Rivers, John Rivers, and Blue Rock, are ripening fast, and the trees will require very great care in watering to finish the fruits perfectly and prevent them from splitting. Do not give the roots any stimulants; use clear water only until the crop is finished. Syringing should be discontinued. Admit plenty of air through the top and front ventilators both night and day. A slight shade over the glass, such as a double thickness of fish netting provides, is advisable during bright bursts of sunshine. In picking the fruits great care and very careful handling are necessary to preserve the bloom. I am strongly of the opinion that only the grower should arrange dessert fruits for the dining table. All fruits sent to the dining room should be named on a small, neat card. This small item often stimulates the employers' interest in their garden produce.

Melons.—When the earliest batch of Melons is finished it is advisable to thoroughly clear and cleanse the house. Remove the material of the old beds. Prepare a strong mixture of soft soap and paraffin; bring this to boiling point and thoroughly stir till it becomes like a jelly, then mix about half-a pint of this to each bucketful of water for washing the woodwork, glass and walls of the house. Whitewash the walls with fresh lime to which a handful of sulphur has been added. Leave the house wide open for two to three days, when the new beds should be placed in position for the successional crop. This work is best done very early in the morning at this time of the year, thus preventing the men working in discomfort. Continue to plant Melons in frames as the latter become vacant, using varieties of strong constitution and those of the Canteloupe type.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Morello Cherries. — These trees are making growth very rapidly and will need attention. The young extension shoots, and those that will bear the crop next year, should be tied loosely to the wires, not too thickly but much in the same way as in the case of Peach trees. All outstanding growths and badly placed shoots should be removed. Spray the trees with Quassia extract if black fly is detected; it is also a good practice to spray as a preventive against this pest. Where Morello Cherries are grown on east and west walls the roots should be mulched with light material to prevent the soil from drying out in hot, sunny weather. The border should be examined occasionally this month and the early part of next to see if water is required; if moisture is needed use weak liquid manure, but not after the fruits have commenced to colour. Trees growing on north walls will not need watering, unless the weather is very hot and dry this month.

Sweet Cherries.—As these trees advance in growth the young shoots should be stopped, unless they are required for extension. By stopping the growths early attacks of black fly are largely prevented; this aphis gives a check to the tree in a short time. Stopping the young growths as advised obviates the necessity for late spraying, and spray material is very distasteful on ripe fruits. So soon as the first fruits commence to colour nets should placed in position to guard against the ravages of birds.

Apples.—In many places the crop of Apples is very large, but it will be wise not to be in too great a hurry to thin the fruits as many early flowering sorts are all ready thinning themselves, especially some of the shy setting varieties, such as Norfolk Beauty, Hollandbury, and Baumann's Red Reinette. The freer setting varieties will need attention first in this respect. All small and useless fruits should be removed so soon as it can conveniently be done. The trees will require weekly attention where they are laden with fruit until the thinning is completed. The distance of the fruits apart at the final thinning should vary from nine inches to twelve inches, according to the size of the variety and the crop on the tree. If fruits are required for exhibition purposes the grower must use his judgment in thinning according to the variety, and whether it is a cooking or dessert sort.

Gooseberries.—Keep a sharp watch for caterpillars on Gooseberries, which would soon make the bushes look very unsightly. If caterpillars are observed place sheets of paper under the Gooseberry bush and then shake the bushes; most of the caterpillars will drop on the paper and may be easily destroyed. In the evening spray the bushes and the ground beneath them with Katakiller; next morning the bushes should be syringed vigorously with clean water to cleanse the Gooseberries and the foliage. When the crop is heavy remove the small berries so soon as they are large enough for bottling or otherwise preserving. If required for dessert, thin the berries very early so as to give them every opportunity to develop to a large size.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Peas.—Make further sowings of Peas for late supplies. Gladstone is still one of the best sorts for this sowing. It is advisable, if possible, to grow late Peas in rows a considerable distance from each other, as there will then be less likelihood of the plants becoming attacked by mildew, as is generally the case when the rows are close to each other. If sowings are made later than this, it is advisable to select one of the earlier varieties such as Pilot, as they will be found to mature quicker. Successional batches of Peas are now growing fast, and the plants should be mulched and well watered with diluted liquid manure.

Cauliflowers.—Early plants of Cauliflowers are growing rapidly and should receive liberal treatment. Never allow the roots to suffer from drought or the result will only be small, miserable heads. Continue to make fresh plantations so as to extend the supply as long as possible before early Broccoli begins to mature.

Salads.—Continue to sow Radishes at periods of ten days to keep up an unbroken supply of young roots. Mustard and Cress should be sown every few days. There will be a heavy demand for salads during the next few months, and regular sowings should be made at intervals.

Cropping.—During the next few weeks various plots of ground will become vacant and should be re-cropped at once so as to get as much return from the garden as possible. Old beds of Strawberries will soon be cleared and should be filled with Broccoli. It is not necessary to spend time on digging the ground as Broccoli always does well on hard soil after Strawberries. Early Peas and Potatos growing in warm borders will soon be cleared, and the ground may be sown with a successional batch of Turnips, and also a portion with Carrots of the Short Horn type. These sowings will furnish a supply of nice young roots through the autumn and winter.

Maize.—The plants of Sugar Corn that are making fast growth in pots should be planted out in as warm a corner of the garden as possible. Never allow the plants to become dry, as they revel in plenty of sun and copious supplies of water, all of which help to get the Corn cobs matured in good time.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Biennials.—The present is a very suitable time for sowing such biennials as Aquilegias, Canterbury Bells, Perennial Poppies, Sweet Williams, Violas, and Pansies, Myosotis and Wallflowers may also be sown now on any vacant ground, preferably land that is light and friable in texture.

Humea elegans.—If specimens of this graceful biennial plant are desired for next year's bedding display, now is a good time to sow the seeds in pans and germinate them in intermediate conditions, after which the young plants may be grown on slowly. Great care is necessary in watering this plant at all stages, and during winter and early spring months particularly.

Hardy Annuals. — Where failures have occurred amongst the earlier sown annuals, it is not too late to make further sowings of such kinds as Candytuft, Nemophila, and Saponaria.

Flowering Shrubs.—As Ghent Azaleas pass out of flower the seed pods should be removed. Flowering shrubs that bloom on the shoots of the previous year should have any pruning that may be necessary attended to immediately the flowering period is past.

Brassicas.—Continue to plant the various members of the Brassica family as they become ready. The earliest plantations of these will now be growing freely and will require earthing up; before doing this the cultivator should be worked between the rows in order to loosen the ground and better enable the operator to draw the soil to the plants. Earthing up of all kinds of Brassicas is very necessary in exposed and wind-swept gardens. Continue to thin the various crops as the seedlings become ready. Where Beet has germinated badly some of the plants pulled from where they can be spared may be transplanted; they will suffer very slight check if this is done during showery weather

FASCIATED BUTTERCUP.

The remarkable fasciated Celery-leaved Buttercup—(Ranunculus sceleratus)—illustrated in Fig. 184, was found in moist ground by the river Itchen, at Bitterne, Southampton, and was sent to the Botanical Department of the University College of Southampton, where it is now preserved. Unfortunately it has not been possible to secure the root.

The very pale green stem was cut just above the ground level, and is ten inches wide, eight inches high, hollow and flattened. The ridge shown at the top is formed by the common development of about one hundred flowers, and consists of a continuous, waved receptacle completely covered with carpels, and bearing the stamens, petals and sepals in long rows underneath.

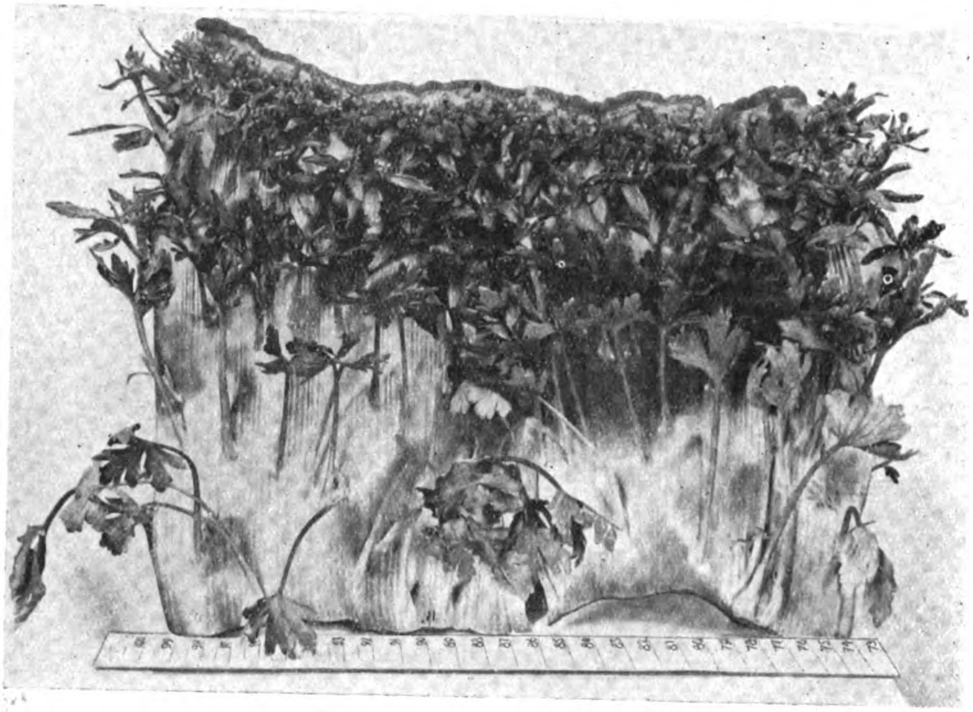

FIG. 184.—A FASCIATED STEM OF RANUNCULUS SCLERATUS, FROM SOUTHAMPTON.

On each side of the stem, about half-an-inch down, and arranged almost at one level, are about fifty clusters of (3-5) normal flowers, closely crowded on very short pedicles. Below this is a third series of flowers with longer pedicels, followed by a fourth and a fifth series, fewer and less regularly arranged. Several groups of flowers spring from the edges of the stem, which bears on the lower parts normal leaves with axillary buds in various stages of development. *S. Mangam, University College, Southampton.*

ORCHID NOTES AND GLEANINGS.

COELOGYNE TOMENTOSA.

This interesting species has flowered again in the collections of Sir Jeremiah Colman, Bt., at Gatton Park, and H. T. Pitt, Esq., Rosslyn, Stamford Hill, and is worthy of note in order to call attention to the fact that it may be considered to be a very fine species when grown properly yet of indifferent merit if not suitably developed.

C. tomentosa was first described by Lindley in 1854 from a Malay specimen collected by Lobb, but nothing was known of it in gardens until 1873, when it flowered with A. D. Berrington, Esq., who received the specimen from Borneo. In the same year the late Prof. Reichenbach gave an interesting note on the species in *The Gardeners' Chronicle* (1873, p. 843). It is a strong growing, evergreen plant of the same section as C. Dayana and C. Massangeana, producing pendulous racemes of fifteen to twenty or more flowers, each about two inches across, the tomentose rachis and pedicles of the flowers giving a well-marked character to the species. The sepals and petals when mature are light salmon-red and the lip is three-lobed, white, streaked with chocolate colour.

This Orchid and others of the section should be grown in baskets or pans and suspended in a warm, moist house. So arranged, the racemes attain their full length, but if grown in pots placed on a staging amongst other plants the racemes are arrested in their development on getting near the stage and only a small number of indifferent flowers are produced. So grown it is an ornamental plant, but its floral beauty is sacrificed. If the species of this class must, for convenience, be grown on the staging, they should be raised well above the other plants so soon as their spikes appear; moreover, the racemes of flowers of such Orchids as Saccolabiums of the retusum section, pendulous Angraecums and other true epiphytes produce more and better flowers when the plants are suspended.

INDOOR PLANTS.

CYCLAMEN LATIFOLIUM.

Although the original of this popular race of garden plants was introduced into this country more than one-hundred-and-fifty years ago, it is during the past fifty years that the development of the large-flowered, richly-coloured varieties which we grow to-day has taken place. Few plants of such modest dimensions contribute so largely to the floral display in the greenhouse and conservatory during the winter and early spring, and for the decoration of rooms their lasting properties make them most satisfactory subjects. The greenhouse Cyclamens come true from seed in innumerable shades of colour, varying from the purest white to crimson and purple, some of the salmon and scarlet shades being strikingly beautiful.

A considerable difference of opinion exists amongst growers as to the most suitable time for sowing the seeds, which is probably due to the fact that there is hardly a month in the whole year in which they may not be sown with a prospect of success. Cyclamens are by no means quick-growing subjects in their early stages of development, and although by good management, February-raised seedlings may be grown into flowering plants by the following November, the plants will not be nearly so strong or produce so many flowers as when twelve or fourteen months is allowed between seed-sowing and flowering.

To produce strong, flowering plants in November, seeds should be sown not later than the beginning of September in the previous year. The most convenient method of sowing the seeds is to fill a sufficient number of five-inch pots with a compost consisting of two parts each of loam and leaf-mould and one part sand. Make the surface perfectly level; sow the seeds singly, and cover them to a depth of a quarter-of-an-inch with fine soil.

To prevent the soil from becoming sour through the water being unable to escape quickly, fill the pots to at least one-third of their depth with rather small crocks, and place a layer of the rougher parts of the compost immediately over them.

Place the pots in a warm part of the stove or in a close case, and with due care in watering, the seeds will have germinated in about six weeks, and the seed-leaves will make their appearance above the surface of the soil. Immediately the first leaf is properly developed remove the pots to a shelf near the roof-glass, and let the plants remain there until the turn of the year, when they will require potting singly. The soil in the seed-pots should be kept moderately moist throughout the winter, as one of the chief essentials to success consists in promoting steady growth during this period.

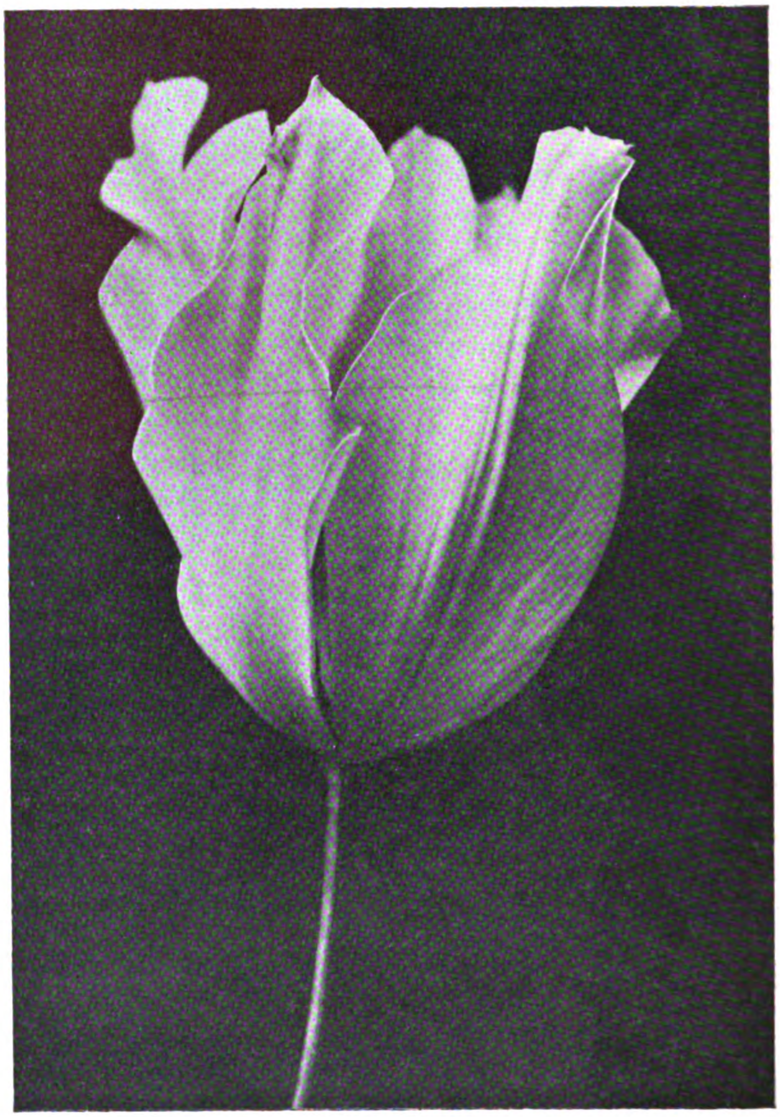

FIG. 185.—TULIP WHITE DUCHESS.

Pure white: A new type raised by Mr. Jan Roes.

(see p. 411).

Early in the year turn the corms out of the seed-pots, put them singly into small sixty-sized pots, and place them in a pit where they will have the advantage of a warm atmosphere highly charged with moisture. Use a compost rather stronger than that advised for the seeds, adding a little well-decayed manure. The ingredients should be chopped up rather roughly, and after they are well incorporated add about one-eighth of the entire bulk of sharp sand. Place the corms just below the surface, press the soil firmly, and give the latter a good soaking with tepid water to settle it.

The stock should remain where it can enjoy the advantage of a warm, moist atmosphere until May, and then be removed to a cold frame where the plants may remain until the autumn and be shaded from the sun whenever necessary. It is also important to allow a free circulation of air through the frame and to sprinkle the foliage once a day, the afternoon being the most suitable time.

In July the plants will be ready for shifting into five-inch pots. These should have effectual drainage; firm potting should be practised, and the corms should be left just showing above the surface. Return them to the frames and keep them rather closer for a fortnight, but so soon as they are established in these pots ventilate the frame freely and maintain a moist atmosphere by frequent sprinklings. In periods of warm, settled weather the lights may be removed at nights, when the plants will benefit from the dew, returning the lights in the morning to retain atmospheric moisture. When the pots are full of roots, occasional doses of liquid manure may be given with advantage.

In September or October the plants should be removed to a pit or house having an intermediate temperature, when they will soon commence to throw up flowers and become available for the conservatory. Careful watering is necessary during the winter, and it is essential to prevent the exposure of the plants to cold currents of air. Remove faded flowers as they pass over, and successional ones will follow to continue the display right through the winter.

Many cultivators grow the corms the second year, and it is wise to reserve the best for this purpose, as larger plants which flower more freely may be grown in this way. So soon as the flowers are past, lessen the supply of water slightly, and gradually reduce the amount until it can be withheld altogether; when the foliage has ripened the plants may then be rested for a time in a cool house. Towards the end of July clear the plants of all dead and decaying leaves; stand them in a frame and sprinkle them every afternoon. Immediately they begin to break, shake them out carefully, taking care to injure the roots as little as possible, and re-pot them in the same sized receptacles, using similar compost as advised for the final potting in the previous year. Return the plants to the frame and keep the lights rather close until the roots begin to take possession of the new soil, and then gradually increase the amount of ventilation but guard against exposure to strong sunshine.

In September shift the corms into a size larger pot, and instead of returning them to the frame place them in a cool house where they can have just sufficient warmth to promote a steady, progressive growth, but no more, as, although the Cyclamen likes warmth in the young stage, the mature plant is very impatient of artificial heat.

Under good cultivation few insects attack the Cyclamen, but it is subject to injury from green fly at all stages of its growth, and the plants should be lightly fumigated on the first appearance of the insect. Red spider and thrips only appear when the atmospheric conditions are too dry, hence a judicious use of the syringe is the best preventive. When red spider has gained a foothold it is not easy to dislodge, and the best remedy is to dip the plants in a nicotine-soap solution, and afterwards in clear water. *W. Auton.*

A TULIP TOUR IN HOLLAND.

I CAN only describe my Tulip tour as a *multum in parvo* affair. In the space of six days I visited the big show at Heemstede, the grounds of five important growers, and a sale-room at Amsterdam, where there were on view coloured pictures of ancient varieties painted by Jan van der Vinne and other celebrated artists of by-gone days.

Three things especially struck me. First, the mad haste of growers to possess the best varieties of the new Mendel Tulips. Secondly, the splendid beauty of a mass of the new parrot variety Fantasy. Seen in bright sunlight, I no longer wonder at everyone's anxiety to procure as much stock of it as possible. Thirdly, the large number of pure white Cottage or Darwin varieties that are to be seen at the different growers' establishments. It was an eye-opener to me, and I think to some of my Dutch friends also, when I told them of the numerous whites that I had seen. Years ago, the market asked for pure white Darwin and pure white Cottage varieties with desirable stems. And just as it was when Lincoln asked for recruits :—

> "They are coming Father Abraham,
> As our fathers came of yore,
> Ten hundred thousand more,"

so England, too, will contribute her quota.

At Wesbach, a big firm "has some beauties" coming along; and Mr. Dykes showed me samples at Chelsea of a fine, pure white Darwin Tulip of excellent shape and with pale pollen, of which he has already a nice little stock. "Market" has not asked in vain. But—and it is a big and a comforting "but" to holders of Zwanenberg, Carrara, Themis, and other whites of lesser degree already in commerce—I came across no big stocks. Even at Mr. Warnaar's, where there were the largest ones, it will not be next year or the year after that individual stocks will become of a marketable size. At van Leeuwen's there were goodly numbers, but the stocks were still small. It will take time before white varieties become in Tulipdom as gold was in Israel in the days of her famous king, when we read: "It was not anything accounted of in the days of Solomon."

Perhaps the most beautiful of all the many white Tulips which I came across were the two which Mr. Roes had in his new glasshouse. The petals had a certain resemblance to the Lily-flowered type, but they did not recurve at all, but went straight up almost parallel with one another, thereby showing off their semi-corkscrew twistings, which have all the grace of a Maximus Daffodil. Both the varieties were of a spotless white, only, in the case of White Duchess, the six filaments—and the filaments alone—were of a pretty shade of blue. Mr. Roes had asked me if I could suggest names for his two beauties. I had just suggested White Countess for the all-white and White Duchess (Fig. 185) for the blue-filamented one, when who should turn up but Mr. John Scheepers, of New York—the catalogue magnate of the United States. Which did he think the most beautiful? "That," he said, as he pointed to White Duchess. It was pleasing to have my opinion confirmed by one of such wide experience. But I must leave the white sorts lest my readers may think there are no coloured recruits coming along. Such is far from the case. I may say, literally, I saw them in their hundreds—as one large grower said to me, "we have not been idle all these years." I am sure they have not; I am sure also that they have had a strenuous time to keep things going all the long years of war. The Dutch were regulated just as strictly as we were in Britain. They could not grow just what they liked. Everyone had to devote so much land to Potatos and other vegetables—Tulip bulbs were wanted for coffee-making, and so on! Like Gilbert and Sullivan's policeman, their lot was not a very happy one. We ought to be glad that they carried on so well as they did. The world needs flowers, and the world is very large; and so larger and larger quantities will be needed as people find themselves able to indulge in what is surely the most innocent of luxuries—flowers.

In my account of the sixth special show at Heemstede, I wrote at some length of Mendel Tulips (see page 401). There is no necessity to say more now. It is pretty well a Hobson's choice with me. I only saw a number of headless plants busily engaged in laying up provisions for another year's display.

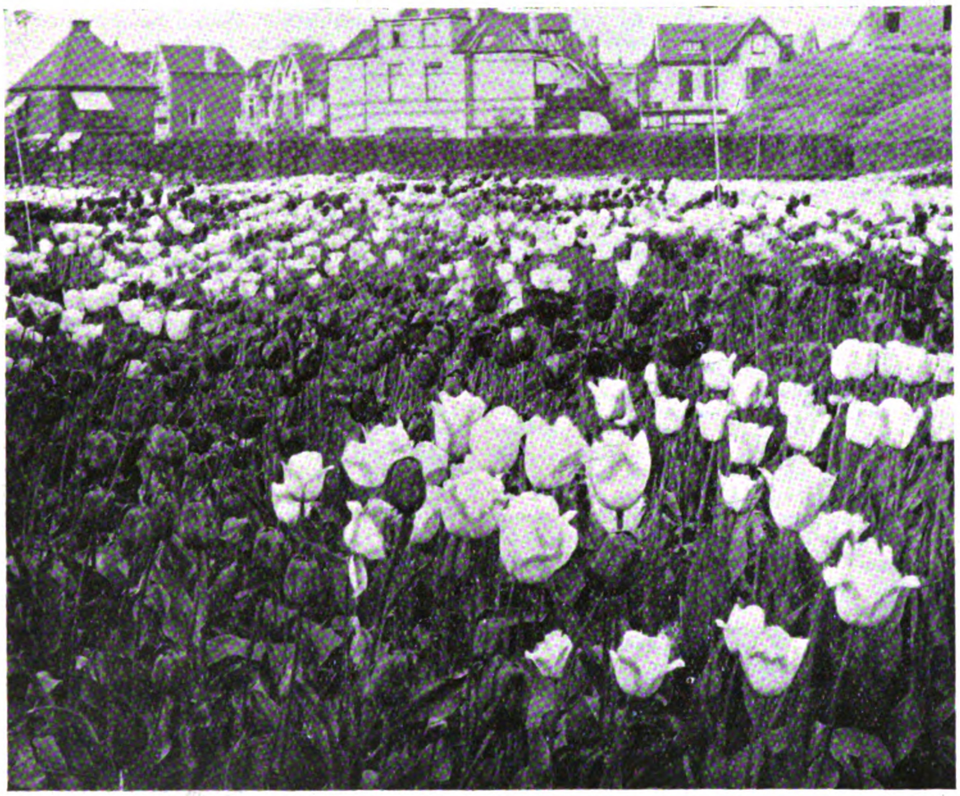

FIG. 186. SEEDLING LATE TULIPS AT MESSRS. C. VAN TUBERGEN'S NURSERY, HAARLEM.

At van Waveren's I learned that another new strain of Tulips has appeared as the result of mating Cottage varieties with Darwins; but, judging from those which I saw, there is nothing very distinctive about them. Browny-yellow, and rather pale, pinky-mauves seemed to predominate. Coming now to individual varieties, I must first of all make the *amende honorable* to Rosabella, one of the new Cottage varieties. Whenever I came across it in Holland it looked very wishy-washy, and I said I could not understand why all the dealers snapped it up so readily. Now I know. I had always seen it on its last legs. When I came home I saw it as it should be, a pointed flower, with charming, fresh-looking, rosy-pink petals, edged with the palest blush.

With Rosabella I couple the new Darwin Orange Perfection, for the simple reason my little patch of it at home showed it at its best. It is a trifle difficult to understand how it came by its name, but there is most certainly something else in its composition besides rose—a something which gives it a brightness and a distinction which are most attractive and which in certain lights appears as a thin sheen of orange. One of the Tulips which have been with me the longest is an extremely old Darwin known as Oliver Goldsmith. Through fair and foul I have stuck to it and claimed for it a special place as the very brightest of all Darwins. Orange Perfection is as like in colour to Oliver Goldsmith as a big Pea is to a small one.

It is curious how I find that my partiality for particular colours changes from time to time. Now it is rose, Petrus Hondius—the Tulip, of course, and not the sarcastic old man—was one of the first to rouse my enthusiasm. Now, after seeing such beauties as Chant de Cygne, which is a delightful soft-toned rose with a blue base; and the Cottage Aegir, which has Euterpe-shaped outer segments and a white base with blue edges, the whole flower being a bright orange-rose, it is rose more than ever. Of deeper-toned varieties, none appealed to me more than the long-shaped Alcmene—a plant of medium height—and for an edged one, van Tubergen's Turner, an immense flower with a deep rose flame, with a narrow edge of pink.

Yellows were much in evidence. At Mr. Warnaar's it was the flame-shaped Alaska, with pretty primrose and lemon colouring. At Messrs. van Tubergen's their name was legion. Mongolia was, naturally, there. It is a flower somewhat on the pale side—very large—never opening out wide, keeping its Chinese-lantern shape all its life—of medium height, and with a darker centre and black pollen. Personally, I preferred Madame Buyssens, a pretty, canary yellow, also lantern-shaped, and of immense size. After their "immensities" I must say a word for a wonderful, deep yellow, which in colour leaves Walter T. Ware behind, and probably matches that shapely florist's variety in form. It has been christened J. H. Wentholt out of compliment to the late president of the Dutch Bulb Growers' Association. It is a wonderful laster. If anyone can tell me when a row of about half-a-dozen bulbs will have made sufficient increase to be put into commerce, then I will state when we are likely to find J. H. Wentholt in the dealers' catalogues.

There are innumerable beauties that I must leave unsung: the rosy-edged and flamed-yellow Belladonna; the rose and orange Dido; the jolly, little, bright, ruddy-orange Marginata; the magnificent, crimson Refulgence; the exquisite, red Brightness, with its pure-white base; Burgomaster Sandberg, which I described in my notes as "an oxen-blood self, very unusual and rich"; E. A. Bowles, a refined, pale-mauve Darwin; the scarlet Perseus, of which the first bulb sold realised £20; Mr. Hoover, a pale heliotrope, with an almost white edge; Aréthuse, a very fine lemon-yellow; and The President, perhaps the most orange of all Tulips. These are but a tithe of what are coming. Lest I should seem to exaggerate, just look at the picture of the numerous novelties in the grounds of one firm only—that of C. G. van Tubergen (Fig. 186). I take off my hat to the firm, not only because its grounds are so convenient for visitors to Haarlem, but because now that there is so very little left unbuilt upon of the ground where the mania-time Tulips once grew and flowered, it, in some measure, keeps alive the old tradition that Haarlem is the City of Tulips. Take comfort, you writers of the Black Tulip (La Tulipe Noire) and the Laughing Cavalier, Tulips are still a reality and not just a name on this famous ground. *Joseph Jacob.*

NOTES FROM A WELSH GARDEN.

A late spring has its compensations, and the fact that many of those shrubs and other subjects which are wont to have their blossoms ruined by May frosts have this season escaped is worth a good deal. Azalea ledifolia is, for example, now (end of May) enveloped with its snow-white, fragrant flowers, this superb species never having done better. Rhododendron glaucum and R. oreotrephes, which oft-times get nipped, are also in first-rate order. Our large bushes of Cytisus fragrans, growing quite in the open, have had an opportunity of wreathing their elegant branches with the fine yellow blossoms. Sutherlandia frutescens, often more precocious than discreet, is bearing an unblemished crop of its brilliant scarlet flowers, and such excellent but tender shrubs as Ceanothus rigidus, Solanum crispum, Salvia Grahamii (unusually early this year) and the prostrate Rosemary have been equally fortunate. Sedum compressum and S. Palmeri are also testifying to the advantages of a late spring.

No plant has attracted so much attention and admiration during the past month as Meconopsis quintuplinervia, the Harebell Poppy of Northern Tibet. A good group of this choice species has yielded a large number of its beautiful bowl-shaped, nodding blossoms, whose four broad petals are a Hare-bell blue lined with a wan, silvery azure. The foot-stalks, each of which bears but one of these exquisite blossoms, are about eighteen inches, or even more, in height, yet they seem able to withstand the most boisterous weather and the blooms remain in full beauty for well over a week. This charming subject is evidently a true perennial and it has proved an easy doer with us in a light, fairly cool, well-drained loam near the water, with a little shade from the midday sun.

Another group, near the above, which has aroused much enthusiasm, consists of several plants of Mr. G. H. Dalrymple's pink variety of Primula pulverulenta, these being a notable acquisition to the spring bog-garden, to which it has brought a new and very pleasing colour. P. Wardii has been flowering for a month or more with P. frondosa, P. Veitchii, P. involucrata and others, and now, as these go off, an odd and arresting contrast is being afforded by some bold clumps of the noble P. helodoxa towering above an array of the always delightful and fiery little P. Cockburniana.

Two very prostrate creeping plants which have proved useful at the margin of the water are Veronica repens and Claytonia australasica. The former covers its close, dense carpet of fresh green with pale China-blue flowers and the latter makes a tiny grassy sward, studding it with pearl-white, stemless blooms. Both might become troublesome in the wrong place; but for carpeting the soil between bigger subjects, thus excluding weeds, we have found them serviceable as well as pretty. Myosotis Rehsteineri is also a charming little plant for carpeting moist places, its pale green mats being inset with dainty flowers of an intensely bright blue throughout the spring. Near the above we also have Parochetus communis, and although we usually anticipate having to replant this Himalayan species the apparently barren soil it so copiously covered last autumn almost invariably begins at this season to show the tiny trefoils of returning life.

The earliest of the Geraniums to flower this spring was G. Pylzowianum, a charming plant where it does not devote the whole of its energies to colonising at the expense of flowering. Then came the quaint twelve-inches tall G. macrorrhizum, with a distinct and attractive foliage, which is highly aromatic, and red-purple flowers with curiously inflated calyces. Some bold groups of the stately and handsome G. anemonaefolium were bearing quantities of blossom before the end of May—groups that will continue to flower well into autumn. G. Farreri (Farrer's Pink) is also in full bloom, a little plant of a rare and delicate loveliness which appears to be strictly herbaceous. G. lancastriense holds its own, as it always will do, on the ledges of the rock-garden and here also are one or two good forms of G. Traversii in clear shades of pink and some healthy clumps in full bloom of G. argenteum and G. cinereum.

Pentstemon Scouleri, if not one of the more brilliant members of its gorgeous race, is a shrubby species which is singularly beautiful during May, its large, fat bugles being of a peculiarly pleasing lavender hue. This is, moreover, one of the hardiest and easiest of its class. P. Roezlii, a smaller shrublet of about nine inches, is also in flower, its blossoms being not less pronounced in colour than those of the better-known P. Davidsonii. Sharing a hot, gravelly ledge with them is Lewisia Howellii. The four-inch stems each carry several large flowers, whose rays open with a delicate apricot tint and pass into rosy-pink margined with white, an unusual colour combination which never fails to attract. The curiously chequered Helichrysum Selago is also here, a plant, by the way, that has proved perfectly hardy for many years without any protection. Achillea Clavennae, A. Kellereri, A. Huteri and A. serbica (of most lists) still stands out among others of the genus in white, whilst among the earliest of the Erodiums one must note the distinctive merits of E. Gussonii and E. guttatum and spare a meed of praise for that worthy old all-season and easy species, E. pelargoniflorum.

Iris gracilipes is a rock-garden Iris of the most ineffable charm, making dense, grassy, pale yellow-green tufts six inches tall, above which, about the end of May, hover on slender stems the daintiest of blossoms in delicate lavender and gold. This delightful plant thrives like a weed in the driest places of our rock-terrace slopes. It is one of the comparatively few really choice subjects which, here at any rate, will take care of itself for years, even in the crevice of a rock.

Several old specimens of Daphne Cneorum have been billows of pink for nearly a month, the lack of sunshine and humid weather evidently being favourable to a long flowering season. The pretty Convolvulus Cneorum is still carrying quantities of bloom, and among other flowering rock-garden shrubs the dwarf Brooms are conspicuous features of the season. These are such admirable subjects for the purpose that one wonders why they are not more often grown in greater variety in rock gardens generally. Cytisus Beanii, C. Ardoinii, C. kewensis, C. decumbens and C. austriacus var. Heuffelii, with Genista glabrescens, G. spathulata, G. germanica, and G. hispanica to mention a few species now in full bloom, are all easy and permanent plants and extremely useful for any poor, stony soil, being distinctly showy. We find some of the above most effective in combination with masses of Lithospermum prostratum, but it is not easy to place them wrongly and few subjects ask so little attention.

A group of the prostrate Rhododendron rosaeflorum on the bank of a stream is unusually well furnished with bloom. Near these a clump of Anemone narcissiflora is breaking into pink and white, which is very effective among native Ferns in part shade, whilst hard by there is a strong colony of the lovely Aquilegia alpina and a quantity of that much more permanent and excellent woodland species, A formosa, in scarlet and yellow. Perhaps the rarest and most interesting plant in the woodland is a Gaultheria which came here with the specific name of "perplexa." This little prostrate shrub, with small, linear, bronzy leaves did little but languish until it became almost covered by the trailers of Linnaea borealis. This companionship seemed to give it the courage it so sorely lacked, for to-day its flat, wiry branches have suspended from their undersides numbers of urn-shaped, waxen-white bells about as large as those of Cassiope tetragona. *A. T. Johnson, Ro Wen, Talycafn., N. Wales.*

HARDY FLOWER BORDER.

HELIOPSIS.

It appears to me that the genus Heliopsis receives but scant justice from both professional and amateur gardeners.

There are a few species, with several varieties, and it cannot be said that any one of them is of little value for the border. Some of the Sunflowers, or Helianthuses, which are invaluable in their season, are very popular in gardens, but the Heliopsis comes into bloom much earlier than the majority of the Sunflowers, and lasts for a very long time in bloom. Then, unlike some of the Sunflowers—Miss Mellish, and its class, for example—it is not inclined to wander among other plants, and this "stay-at-home" disposition is a very great advantage.

The flowers of all the species and varieties of Heliopsis are moderate in size, nearer the dimensions of, say, Helianthus decapetalus, than of Miss Mellish Sunflower. They are of a bright or orange-yellow, according to the variety, and the plants grow to a height of four feet or so, more or less, according to the nature of the soil and the amount of moisture.

It is now many years since I made the acquaintance of H. scabra, a good yellow flower, but it was eclipsed by the introduction of H. Pitcherianas, of a deeper yellow, and with larger flowers. Since that time we have had the Rev. C. Wolley Dod's grand form, with flowers of deep orange; H. laevis, with smoother foliage and good orange flowers; also H. scabra major, which is rather larger. Recently, the double-flowered H. zinniaeflora has made its appearance, and is favoured by some.

One or two of these Heliopsis form a desirable addition to the flower border, where plants from three feet to four feet high are desired. They grow well in ordinary soil. I have found them do quite satisfactorily in a rather dry border, but a well-enriched soil of moderate loam will serve better. Increase is effected by division, or, in the case of H. laevis and H. scabra, as distinct from their varieties, by seeds. Division is best effected in spring, when, also, seeds may be sown under glass. Plants such as Heliopsis, which begin to flower in early summer and continue blooming for several months, are of special value in the mixed border.

VERONICA VIRGINICA.

Veronica virginica is one of the taller Speedwells, and a valuable plant for the border or the wild garden. Apart from its boldness of habit and its long, feathery spikes of bloom, it has the quality of being rather later in flowering than most of the other tall herbaceous Veronicas, so that it comes in well to associate with the other flowers of late summer and autumn. Its height is generally given as about three feet, but it easily attains a foot more, even in dryish soil. It is, therefore, valuable for growing near the back of the border or for forming bold groups in the wild garden.

It has whorled leaves on the tall stems, and the latter are surmounted by good spikes of bright-looking flowers of blue-lilac, pink, or white. This Speedwell demands no special attention in the matter of soil; it flourishes in sun or shade and it is perfectly hardy. As a border plant it deserves consideration. It may be raised from seeds, but it is desirable to propagate the pink and white varieties by division, an operation which may be performed in spring or autumn. *S. Arnott.*

TREES AND SHRUBS.

A SELECTION OF AMERICAN WILLOWS

(*Continued from page* 398).

A very remarkable species is Salix Hookeriana, according to Howell, "a plant of the sea coast and salt marshes, usually growing on the margin of ponds," with ascending stems and stout twigs, in clumps usually 1.5 to 3 metres high. According to Prof. Henry the leaves of his var. laurifolia are very striking in autumn by their yellow colour, while in the species the leaves usually blacken. The var. laurifolia ought to be grown in our collections. The beautiful silvery aments of S. Hookeriana are a feature of S. Piperi, too, a species from Washington and Oregon that much resembles S. Hookeriana var. laurifolia. Piper says that the plants he saw had several stems rising from the same root six to seven metres high, not much branched till near the top. The branchlets are dark coloured and smooth. Some of the species just mentioned are probably now in cultivation in the Arnold Arboretum.

The representative of the section Candidae, S candida, the Sage or Hoary Willow, came to England more than a hundred years ago. It is widely distributed through the eastern United States and Canada westward to Colorado and Montana. The species is usually found in cold bogs and Tamarack swamps, and in its stiff habit, its narrow leaves, which bear a very whitish pubescence when young, it reminds one of S. viminalis, from which it is, as Bean rightly states, easily distinguished by the leaves being dull, not glistening and satiny beneath. S. candida hardly exceeds 1 m. in height, and hybridizes rather freely with S. cordata.

Of the section Fulvae, to which one of the most common American Willows, S. Bebbiana (syn. S. rostrata of Richardson, not of Thuillier) belongs, the most remarkable species for horticultural purposes is S. Geyeriana (syn. S. macrocarpa of Nuttal, not of Trautvetter). It forms clumps in wet places, and the branchlets are glaucous or whitish, sometimes black in var. meleina. It is a species of the western states from Utah to Montana and British Columbia. This shrub rarely grows up to more than 1·5 m., and in winter time forms conspicuous masses on account of the bluish bloom of its twigs.

An attractive "bog" Willow of the habit of our S. myrtilloides is S. pedicellaris (syn. S. myrtilloides var. pedicellaris) from the eastern United States. It belongs to section Roseae. Another interesting Willow of this group is S. fuscescens, a prostrate and creeping plant of the Sphagnum marshes and of the Tundra in Alaska. It is represented by var. hebecarpa, also in bogs, on the serpentine tableland of Mount Albert on the Gaspé Peninsula in the east.

In the section Griseae, of which S. petiolaris and S. sericea are mentioned in Mr. Bean's *Trees and Shrubs Hardy in the British Isles*, S. humilis may be regarded as a rather valuable plant for very dry places. Dwarfer and neater is S. tristis, hardly higher than from 25 to 35 cm. Both occur in the eastern and central parts of the United States.

Of the section Discolores, with the eastern S. discolor, and the western S. Scouleriana, none really deserves to be recommended. This group is of the same variability as our Capreae.

The Phylicifoliae, however, contains some American species well worth consideration. There is, in the first place, the handsome S. pulchra from Alaska and the Yukon Territory. It is easily distinguished from the other members of this group by its large, persistent stipules, a character found in species like S. Richardsonii, and it may belong to a different section. With its precocious aments S. pulchra is of no small beauty when in flower. It sometimes becomes a tree. The new wood is smooth and bright shining brown. The old leaves are glabrous, almost entire, bright green above and glaucous beneath. In higher elevations it remains a low shrub. Its horticultural value has to be tested. *Camillo Schneider.*

(*To be concluded*).

GENISTA HISPANICA.

A well-placed group of the Spanish Gorse is a conspicuous feature in the rock garden or shrub border at this season. Bushy and compact in habit, and, when established, remarkable even in outline, it forms a spreading mat up to two feet high.

Genista hispanica is an ideal rock garden shrub, its glorious colouring in the mass lights up the weathered stone with superb effect. Each of the innumerable spring branchlets bears at the apex several sparsely-foliaged, short-stemmed, circular clusters of bright yellow flowers. A native of south-west Europe, and cultivated in British gardens for a century and a half; it requires a sunny position, and a well-drained, gritty soil. *Fred W. Jeffery.*

PASSIFLORA CAERULEA.

Passiflora, the Passion Flower, is from *passio*, passion, and *flos*, a flower, referring to the filaments, or rays, and other parts of the flower being likened to the circumstances of Christ's crucifixion. The name evidently was applied from the resemblance afforded by the parts of the plant to the instruments of Our Lord's passion, and its attendant circumstances; thus the three nails—two for the hands and one for the feet—are represented by the stigmas; the five anthers indicate the five wounds; the rays of glory, or, as some say, the crown of thorns, are represented by the rays of the corona, whilst the ten parts of the perianth represent the Apostles, two of them absent (Peter, who denied, and Judas, who betrayed Our Lord); and the wicked hands of His persecutors are seen in the digitate leaves of the plant and the scurges in the tendrils.

The Passifloras comprise an extensive genus of hardy, half-hardy, and greenhouse climbers, mostly natives of tropical America, the larger number of which are seldom seen in our erratic climate. Two that may be planted in favourable positions with success are P. caerulea and the variety Constance Elliott, and if given a south or south-west aspect, and for preference against a wall, where the heat from the walls serves to ripen the wood, they provide a most delightful tapestry, making growths from fifteen feet to twenty feet long.

The delicate blue of P. caerulea and the snow-whiteness of the variety Constance Elliott, are very pleasing, and the flowers have a most delightful perfume. The tinted foliage and egg-shaped fruits are particularly attractive during late summer and autumn. If planted in a fairly rich and deep soil, and given a slight protection during winter, the plants should grow well and flower freely. *W. Logan.*

BULB GARDEN.

IXIOLIRION TATARICUM (PALLASII).

This is a very pretty May and June blue flowering, bulbous plant, and highly recommended for planting on rockeries or the front of herbaceous borders in clumps of twelve to eighteen bulbs, where colour is needed.

The plant grows from twelve inches to eighteen inches high, and bears handsome, tubular, Lily-like flowers on stout, wiry stems, the inflorescence consisting of from three to six flowers of a beautiful azure-blue shade. The blooms last well and are most useful as cut flowers. This Ixioliron should be planted in a sunny situation, preferably in a fairly light, well-drained, sandy loam in September and October, setting the bulbs from three inches to four inches deep. *L.*

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PLANTAE CHINENSES FORRESTIANAE.

[1921–1922].

THE Blue Book recently issued from the Royal Botanic Garden, Edinburgh,[*] contains a catalogue of the plants, other than Rhododendrons, collected by Mr. George Forrest in Yunnan and Eastern Tibet in 1921 and 1922, and placed at the disposal of the Regius Keeper by the patrons of the expedition, Mr. John C. Williams and Mr. Reginald Cory.

To those without interest in plants or exploration, such catalogues make dry reading, though they bear tribute to the untiring energy of the man who has done so much for botany and horticulture. But give imagination rein, and the cold print of page after page of field tickets is galvanised into life. With the elevation records to help us, we can follow the explorer up hill and down dale; see him clambering now at 6,000 feet, then up to 8,000 and 9,000 feet, back again to 7,000 feet, and finally making a long, stiff climb till he is a mere speck at 15,000 feet. And as he moves about, the flowers and the field tickets and photographs taken during previous expeditions tell us much of the character of the ground over which he is going, whether he is in open, peat moorland covered with Rhododendron scrub; in stony, moist meadows; on dry bouldery cliffs; in one of the marshes which are so numerous; on the margins of Pine or Rhododendron forest; among loose, rubbly screes or by the side of a mountain stream, with Senecio, Thermopsis, Pyrus, Philadelphus, Asplenium, Woodwardia, Meconopsis, Primula, Nomocharis, and scores of other plants in bloom.

The expedition under notice is the fifth of a series in which the intrepid explorer has engaged since he made his first journey to China, and it extends the area he has already explored further west and north. The area lies between latitude 24° 35′ N. and 28° 48′ N. and longitude 97° 35′ E. and 101° 6′ E., and it is unfortunate that the best maps of the country at present available are on so small a scale and so lacking in detail that those interested in Chinese exploration can only follow the explorer's footsteps in a general way. In 1921 and 1922, Mr. Forrest journeyed beyond the Salwin-Kiu Chiang divide on the west, while on the north he continued his survey along the same divide as well as along the main Mekong-Salwin divide. Although it is as difficult as ever for foreigners to penetrate into the Tsarong, the area explored includes a part of that Tibetan province, as well as of the Mu-li mountains in south-west Szechuan, where Europeans are viewed with less suspicion and hostility.

The total number of plants collected during the period, including Rhododendron, was nearly 4,000, and of these the present catalogue accounts for 2,649. Of herbaceous plants, the genus Primula outnumbers other genera, and no fewer than eighty-five species figure on the list. Many familiar species appear again, as well as nine new ones, P. monantha, P. eucyclia, P. ingens, P. oxygraphidifolia (akin to P. tibetica), a late (July) flowering species named P. atrotubata; P. aromatica, P. aurantiaca, a Primrose with deep, ruddy orange flowers, which is already in cultivation; P. dumicola, and P. Pauliana, as well as a robust form of P. Littoniana, also in cultivation. P. Coryana was also found in the 1921 to 1922 expedition, and named after one of the two patrons of that expedition, but as it has since been found to be synonymous with P. muliensis (Handel-Mazzetti), it has been reduced to that species. This is the species Mr. Kingdon Ward also saw on the Litang divide in June, 1921, and marked as "the finest Primula I have ever seen."

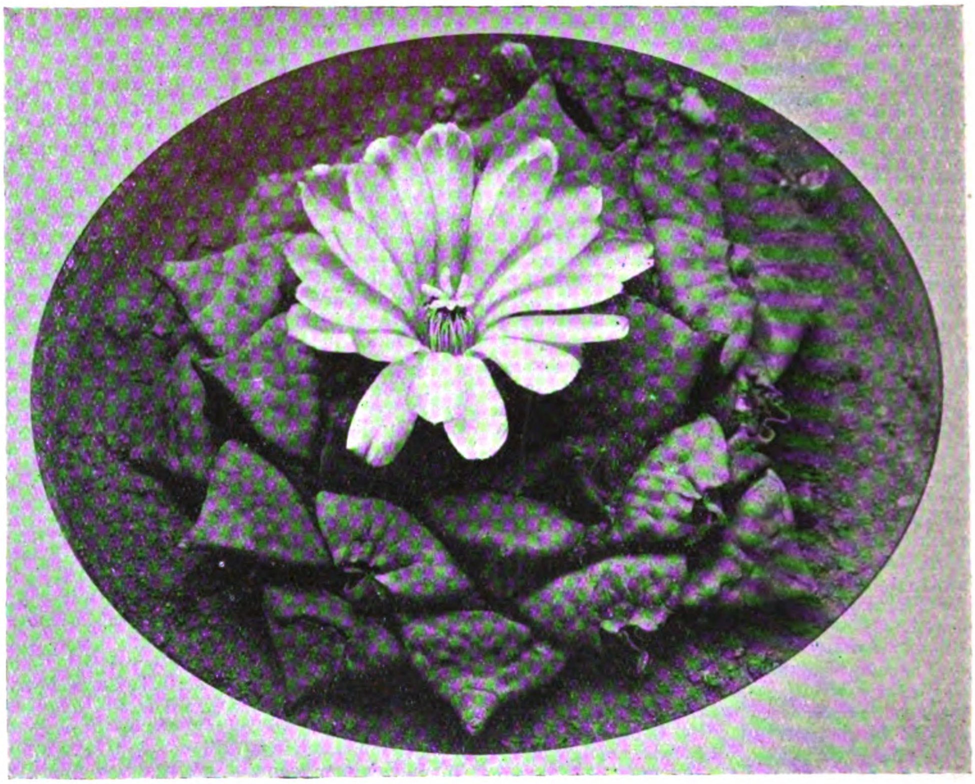

FIG. 187.—ARIOCARPUS RETUSUS, SCHEIDW.
From Saltillo, Mexico (see p. 415).

The collection of Primula, of which there are four unnamed species, varies from dwarf, tufted plants, such as the familiar P. dryadifolia, which forms mats fully a foot in diameter and only an inch or two high on screes and ledges of cliffs at 14,500 feet on the Mekong-Salwin divide, to the giant P. ingens, from two-and-a-half to three feet high, with fragrant flowers, usually of some shade of lavender, but sometimes pale rose. It was found growing in pastures by streams on the Bei-ma-Shan at an altitude of 14,500 feet, and the explorer's field ticket for this species bears the legend: "This is one of the most robust and one of the most beautiful Nivalid Primulas I know." A new and happily named species is P. caldaria, the first member of the Farinosae section collected by Mr. Forrest in Yunnan. It is a plant of from six inches to twenty inches, with fragrant white flowers, and occurs among lush herbage near hot-water springs at 8,000 to 9,000 feet. It is too much to expect that it will take root in Britain.

Next in numerical importance to Primula comes Gentiana, with twenty-six species to its credit, four of them as yet undetermined. Interest will centre on sp. No. 22,930, "a plant of two-and-a-half inches to five inches, with pale *yellow* flowers, mottled and banded blue on exterior." It grows on moors and alpine meadows in the Tsarong at 13,000 to 14,000 feet. Those familiar with G. Farreri will recollect the veining of Primrose which sometimes finds its way into the beautiful sky-blue of the petals.

The small genus Nomocharis is well represented, and among the species found was N. Souliei, with nodding, fragrant, deep crimson flowers, in moist pastures on the Londre pass in the Mekong-Salwin divide. This fine plant is already in cultivation in this country, and is evidently capricious. And N. Souliei is not the least among a representative list of a group which even skilled practitioners find exceptionally troublesome. N. saluenensis is another species to be noted in the 1922 collection. It has pale *yellow* flowers on stems about two feet high, and Mr. Forrest found it in thick grass by the side of shady streams in the Tsarong.

Among the fifteen Meconopsis, the lovely, but in our climate, intractable, M. speciosa fell into the explorer's basket at 14,000 feet, in open, bouldery moorland on the Mekong-Salwin divide. Mr. Kingdon Ward came on this Poppy in 1911 at 17,000 feet on the road to Batang, and was so moved by the sight of it that he wrote it down as one of the most beautiful flowers in existence. The species has flowered in this country, but plants which grow literally on the roof of the world are only for specialists.

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[*] *Notes from the Royal Botanic Garden, Edinburgh.* Vol. XIV. No. LXIX–LXX.

The catalogue includes eight Enkianthus, seven of them still to be named. As a rule, the flowers are green, flushed rose, or yellowish rose, tipped crimson. Of Styrax there are six, two of them from the Tsarong, and among Pyrus Mr. Forrest found one which is said to be used by the Chinese as a stock for garden Pears. The Tsarong yields a pair of interesting Gaultheria species, G. prostrata and suborbicularis, both creeping shrubs. One of the "Plums" of the expedition is Osmanthus Forrestii, a species the reticent explorer rates highly. There are already many plants a few inches high in this country.

None of the twelve Iris is yet named, and we may hope for something new from the five marsh plants and seven high and dry alpines. Lilies yield nothing new, nor Clematis, but there are several of the little known genus Cremanthodium, and a wealth of Rosa, Saxifraga, and Campanula, as well as Prunus, Juniperus, Abies, Acer, Ilex—and scores of other genera, as well as the inevitable Cotoneaster.

A catalogue of 316 pages is not made in a moment. It represents the consideration and determination of all but 2,650 specimens—a herculean task. The fact that the results of an expedition made so recently as 1922 should have been tabulated, enumerated, and distributed already redounds to the credit of the Regius Keeper of the Edinburgh Botanic Garden, his staff, and the explorer himself.

A generation must pass before final judgment can be passed on many of the plants of the expedition under notice, but, meanwhile, the present generation reaps a rich reward from these expeditions and can at least express its gratitude to all concerned for the fine work they are doing in the cause of botany and horticulture. *A. Grove.*

A NEW GENUS OF CACTACEAE.

EVERY amateur of Cacti is familiar, and if it is only from figures, with those strange plants known under the names of Ariocarpus or Anhalonium. They are not often met with in cultivation as they usually perish quickly, yet under suitable treatment they succeed quite well, increase in size and flower annually.

The first plant of this group was collected in 1838 by Galeotti near San Luis Potosi, Mexico, where it was said to grow on porphyritic rocks at an elevation of six thousand five hundred feet to seven thousand feet. J. Scheidweiler, who first studied this plant, recognised it as a new monotypic genus, to which he gave the sowewhat inappropriate name Ariocarpus retusus, *i.e.*, "fruit of an Aria." Aria, DC., is now included under Sorbus and has quite a different fruit, not comparable at all with that of this little Cactus. The specific name "retusus" was very well chosen. It referred to the shape of the tubercles, which Scheidweiler mistook for leaves and which resemble the leaves of Haworthia retusa. Indeed the whole habit of Ariocarpus retusus (Fig. 187) is much like that of this strange little Aloid succulent from South Africa. But a Cactus like Ariocarpus never produces leaves, not even as a seedling, when it has but much reduced cotyledons.

The tubercles of Ariocarpus are densely spirally arranged on the thick stem, only exhibiting their deltoid, acute point. They are covered with a thick, horny epidermis, very well visible when seen against the light, and have on their upper surface a tiny round areole shortly below the tip. This minute areole contains some felt and sometimes minute obsolete spines. For the rest the tubercles are flat or convex and smooth.

In 1839, Ch. Lemaire created a new name for this plant, Anhalonium prismaticum, which, despite the fact that it was from the beginning a mere synonym, has been in use, at least among Cactus growers, up till now.

Later on, in 1842, Lemaire added another species to his genus Anhalonium under the name of A. Kotschoubeyanum. This plant came also from the vicinity of San Luis Potosi. Karwinski had only found three specimens of it. One of these little plants was sold by Karwinski for £50 to Prince Kotschoubey, a well-known amateur and patron of horticulture, whose name the species perpetuates. It was considered one of the rarest plants at that time, but later on it was found more frequently, and now one can find it often advertised among other imported Cacti.

This new species differed from Scheidweiler's plant in so far that its tubercles had the exposed deltoid top roughened and cut by a deep longitudinal fissure.

Later on more similar plants became known, the most remarkable of them was the one which Engelmann described in 1856 as Mammillaria fissurata. It was collected by Schott and Bigelow near the junction of the Pecos and Rio Grande. Engelmann himself transferred his plant later on to the genus Anhalonium.

None of the botanists who dealt with these plants seemed to attach any importance to the fact that the tubercles in Ariocarpus retusus were flat, with a tiny areole at the top, whilst those of A. Kotschoubeyanus and A. fissuratus were rough and deeply slit lengthwise, and had no areole at the tip. Schumann created subgenera out of these plants: Leiothele, Chasmatothele, and Aegopodothele, but he left them under one genus and placed it under the Mammillarieae, whilst Briton and Rose in their large and monumental monograph placed these plants under the Echinocactanae. These two subtribes differ chiefly in that the Coryphanthanae (or Mammillarieae) produce their flowers axillary between the tubercles, whilst the Echinocactanae bear their flowers on the spine-areoles.

The fact that the same genus was placed in two different groups, and the obvious differences in the tubercles, were sufficient reason to investigate the matter; I never felt satisfied with the conception of the genus as it stood and was convinced that they represented two separate genera. Thanks to the liberal help from Dr. J. N. Rose, in Washington, I was able to study various plants of this group and to prove that there are, indeed, two distinct genera.

Everybody can examine this by breaking away a few old tubercles from these plants. He will find, for instance, in the more commonly cultivated "Mammillaria" fissurata

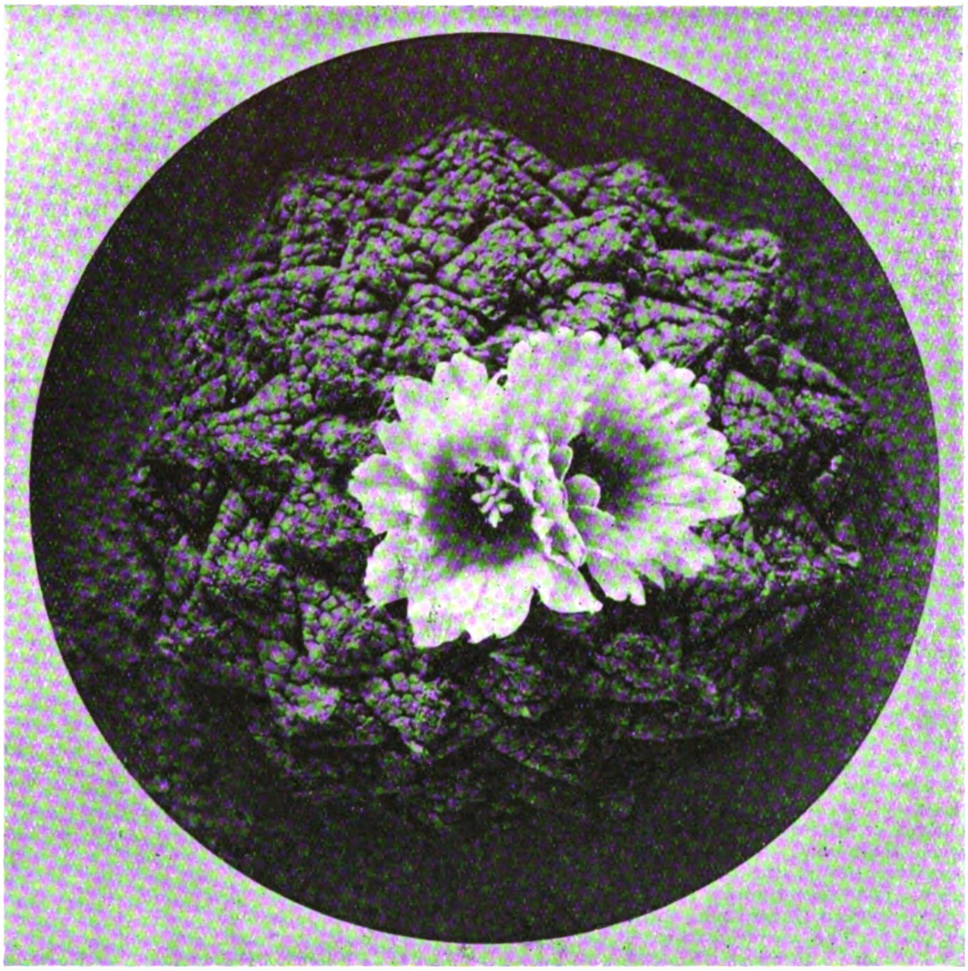

FIG. 188.—ROSEOCACTUS FISSURATUS (ENGELM.), BERGER.

From Lacatecas, Mexico.

of Engelmann from Texas, etc., that a longitudinal cut through the fissure, filled with wool in all its length, conceals at its lower part the remnant of an old fruit, showing clearly the position of the flower. This fissure is nothing but the areole. If we look carefully at any old specimen we discover that on every tubercle the lower part of this areole reveals rests of the old fruit, often containing a number of seeds which can be extracted and if sown and properly treated will soon germinate. How long these seeds have been hidden is difficult to say, as these plants grow very slowly.

If, on the other hand, we examine a specimen of Ariocarpus retusus of Scheidweiler and break off one or two old tubercles, if possible, from a dead specimen, we find large rests of an old fruit and numerous seeds at the base of the tubercle, near the stem. This fact demonstrates at once the axillary position of the flowers as in the Coryphanthanae (or Mammillarieae). It is evident that the plants with axillary flowers differ entirely from those flowering from the fissured top of the tubercle.

The genus Ariocarpus of Scheidweiler can only include those plants with axillary flowers, whilst those with fissured tubercles constitute a new genus to which I give the name of Roseocactus*, in honour of Dr. J. N. Rose, who has done so much for the exploration of the Mexican flora and especially for the advancement of our knowledge of the Cactaceae, and who has recently published, with Dr. N. L. Britton, Director of the New York Botanic Garden, a comprehensive monograph of these plants under the auspices of the Carnegie Institution of Washington.

At present I know of three plants constituting this new genus Roseocactus, namely: R. fissuratus (Mammillaria fissurata, Engelm.; Aciocarpus fissuratus, K. Schum.), which extends from Coahuila to Texas; R. Lloydii (Ariocarpus Lloydii, Rose), from Zacatecas; and R. Kotschoubeyanus (Anhalonium Kotschoubeyanum, Lem.) from Central Mexico.

Of Scheidweiler's Ariocarpus I know only one species, but to judge from the numerous synonyms it may well be possible that two or more species can be segregated when better known.

It is a strange fact that these plants during their whole life keep hiding their seeds between the tubercles. It is difficult to see how they can be dispersed at all; it may be that only when the plants shrivel or die that the rainwater is able to wash them out. They maintain their germinative power during long years. I have grown just now healthy seedlings from seeds taken from a herbarium specimen collected by C. G. Pringle, on Carneros Pass, Coahuila, Mexico, on September 16, 1889.

Doubtless Ariocarpus is a highly developed genus of the Coryphanthanae (or Mammillarieae), but whether Roseocactus is a member of the Echinocactanae or of the Coryphanthanae can not yet be decided. It may be that the fissure of the tubercles corresponds to the groove on the tubercles of the Coryphanthanae. This question can only be settled from young plants. Also the seedlings of Ariocarpus and Roseocactus differ widely, but both possess spines, indicating that their ancestors were spine-bearing Cacti, from which they developed into those exceedingly succulent mimics resembling the surrounding rocks so much that they are easily overlooked when at rest. I am greatly indebted to Dr. T. N. Rose, Washington, for the photographs accompanying this note and reproduced in Figs. 187, 188. *Alwin Berger, N.Y. State Agricultural Experiment Station, Geneva, N.Y.*

NURSERY NOTES.

MR. PHILIP LADDS.

Success in the management of an extensive business conducted for the supply of plants and flowers to Covent Garden market is not reached easily, moreover, rarely are all the qualities that make for success found in one or the same person. When living things have to be dealt with in enormous quantities there are many opportunities for trouble, such as do not occur in a big concern where relatively imperishable goods are produced by machinery. The successful market gardener is subject to all the perplexities that confront a manufacturer and many others besides, notably the vagaries of the weather, and insect and fungous pests. Then, too, he has to catch certain markets, and "timing" the plants and flowers for certain occasions is no light task.

But there are those who carry on such businesses with great success, and they do not appear to carry a double burden of trouble, indeed, they have been usually born and bred in the industry, and regard all its difficulties as part of the day's work. Such an one is Mr. Frank W. Ladds, who had an early training with the late Mr. Sweet at Whetstone, and while still quite young had to tackle the business founded by his father, the late Mr. Philip Ladds. His training and native genius have enabled him to bring the Swanley and Bexley Heath and Moepham nurseries into the forefront of those that cater for Covent Garden. Although Tomatos are grown in houses occupied earlier by plants, Mr. Ladds is chiefly a plantsman and there can be few establishments where so many plants are cultivated and grown to such a high degree of excellence. Cut flowers also are produced in abundance and there are many acres of outdoor Chrysanthemums besides large areas of Gladioli, Alströmerias, Pyrethrums, etc., grown for this purpose alone.

But the chief wonder of the Swanley Nursery at this period of the year is the amazing number of plants in pots, and their number becomes staggering when a visitor at the beginning of June is told that over half of the "bedding" plants have already been disposed of. Mr. Ladds was the first to push the sale of Pelargonium Paul Crampel. He had faith in its future, and his faith has been justified, as shown by the many thousands of plants he sells. This variety and King of Denmark are the two Pelargoniums grown most extensively, and the plants in 60-sized pots are quite as fine as many that were sold in 48's a few years ago, while some of the selected plants in the latter size are quite "specimens." Fuchsias form another good line and they are beautifully grown, the leading sorts being Dollar Princess, Fascination, and Scarcity, and here again the plants in 60's are superb examples of high cultivation. The same observation holds good with Marguerites and Ivy-leaved Pelargoniums and we have rarely seen such excellent plants of the latter as those of the variety Mr. Charles Turner, in 48's.

There are one hundred glasshouses in the Swanley Nursery, and most of them are lengthy, while a few are wide and fairly lofty. May and June are the months in which the largest number of pot plants are sold, and the majority are taken to London in big motor vans as large as a good-sized pantechnicon van. Each van will hold ninety-eight dozen plants in 48's, arranged in three tiers; or two-hundred-and-seventy-two dozen plants in 60's, placed in boxes and arranged in four tiers. In the busy season these vans may do two journeys to town in one day, starting at 4.30 p.m., returning for repacking, and starting again at 9.30 p.m. This will give some idea of the output of the nurseries.

Mr. Ladds has made a fine feature of Hydrangeas, and probably has the largest stock in the country of the deep pink, almost red, variety Parsifal, which he purchased on the Continent directly it appeared. The plants in 32's carrying a dozen or more heads of bloom are grand specimens. He is growing many other varieties and has a grand lot of blue ones. Roses, both dwarf and pillars, are also grown extensively in pots, and many of the latter, together with especially fine Hydrangeas, Coleus, Pelargoniums, and Asparagus Sprengeri will figure in the decoration of Olympia for the International Horse Show. Ferns of various kinds and sizes fill about a dozen large houses, while there are also several houses of Kentias, though Mr. Ladds does not consider the latter to be a very good paying crop owing to the length of time needed to make the plants saleable.

Heaths, for which Mr. Ladds is justly famous, are looking exceptionally well at present, and they are being transferred to their quarters out-of-doors as fast as expert hands can deal with them. The leading sorts are Erica hyemalis, E. melanthera, E. gracilis, E. g. nivalis, E. persoluta, E. Wilmoreana, and E. ventricosa. One house, from which no plants had as yet been removed to their summer quarters, contained no fewer than twenty-six thousand Heaths in 48-sized pots, but there are many houses devoted to these South African plants, and as the occupants have to be transferred to the open ground it will be gathered that this is a very busy time of the year, what with watering and the dispatch of the soft-wooded stuff to market.

Mr. Ladds and his sister, Mrs. Edwards, have a fine staff at their nurseries, and the rapidity with which the men and lads pot, tie, space out and pack, is very wonderful, and the result of excellent organisation, great skill, and long practice.

CHEIRANTHUS KEWENSIS.

One of the most beautiful of early-flowering wall plants—although it must be confessed that its parti-coloured purple and buff tinting is not everybody's taste—is the hybrid Cheiranthus kewensis. The plant is said to have originated as a result of crossing the Madeira species—if species it be—Cheiranthus mutabilis, with a variety of the common Wallflower, Cheiranthus Cheiri. The mutable colour of the flowers of C. mutabilis, first yellow-buff and later a mauve-purple, has endowed the hybrid with its bicolor habit, but curiously enough each flower of C. kewensis displays both colours at one and the same time.

The merit of C. kewensis resides not only in the beauty of colour tone contrasts—purple and buff of each flower, but in its floriferousness, earliness, and vegetative habit. At the present moment specimens of C. kewensis raised from cuttings eighteen months ago are forming dark green, dense, domed cushions over two feet across, beset with a multitude of flowers, the charm of which is enhanced by the dark green foliage. Cheiranthus kewensis, although the pollen which it bears seems to be good, does not—at all events, in our experience—set seed. The vigour which it derives from its mixed parentage is concentrated in vegetative growth and flower production.

It is stated that the plants of C. kewensis now in cultivation are not the vegetatively propagated descendants of the first cross, but were raised by crossing the hybrid with the Wallflower. C. kewensis—or, at all events, the specimens to which these remarks apply—is not long lived. Cuttings taken in autumn flower precociously in the following year and are at their best in their second year, at the end of which the plant dies.

In a garden where these plants are much admired and grown a pale form has recently arisen as a sport from the deeper coloured plant. In it the purple and buff tones are repeated in lighter shades, and although the sport looks a little sad beside the full deep purple of the original, yet there is no doubt but that it also will look handsome enough in a more languid way when planted out by itself. It is certainly interesting to find a plant which is propagated vegetatively sport in this manner; but, of course, similar examples of colour-sports arising in the course of the life of a race propagated vegetatively are well-known—as, for example, among coloured varieties of the Potato.

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* *Journal of the Washington Academy of Science*, vol. XV, No. 3, February 4, 1925.

Like other of its kind, Cheiranthus Allionii, for example, C. kewensis is only seen to perfection when grown on a wall. Planted in a bed on the flat, neither the one nor the other appears at its best; both require a grey wall for their perfect sitting, although either looks well if planted so that green foliage not too far away serves them for background. *A. N.*

FRUIT GROWING IN EAST KENT.

THE tour of fruit plantations organised by the Federation of British Growers, which took place at the end of May, afforded an excellent opportunity for studying the commercial fruit culture of the Canterbury, Faversham, and Sittingbourne districts of East Kent. This is an area of low annual rainfall and free-working soils. The best of the latter are the famous brick earths, which are considered to be ideal for the culture of all kinds of hardy fruit. The deposits of this soil are so deep in some places that fruit trees have been planted in many of the old pits from which the earth was excavated for brick-making, and are still able to flourish ten to twelve feet below the level of the surrounding land. Second only in fertility to the brick earths are the Thanet sands or black pebble lands, deep soils overlying the chalk, which are specially suitable for Cherries and other stone fruits. The fine Cherry orchards seen on several of the farms visited in the neighbourhood of Faversham and Sittingbourne were, indeed, a striking feature of the tour. Their equal could not be found in any other part of the country. Unfortunately, bad weather during blooming time has prevented the wonderful promise of the blossom from being fulfilled, the fruit having "run off" badly, as so often happens with this fickle subject. The same remark applies to Plums and Pears in the area visited. Both bloomed fully, but will not yield average crops. Apples, on the other hand, which bloomed during more favourable weather, appear to have set plenty of fruit, though it is early to form a definite opinion as to prospects. Bush fruits look well, but Strawberries are not very promising in most places.

Insect pests, particularly aphis on Plums, and caterpillars on Apples, are rather prevalent this season; but the best of the plantations inspected, in which a very thorough spraying campaign is adopted, looked beautifully clean and healthy. A more convincing lesson in the value of spraying could hardly have been presented.

CHERRY ORCHARDS.

The usual system of growing Cherries is to plant on arable land, often old Hop fields, maintain clean cultivation for five or six years, and then lay the plantation down to grass. The herbage is then kept quite short by grazing with sheep. Nowadays, pigs and poultry are used as a change in some places. The sheeped orchards present a very attractive appearance, owing to the close and even grazing.

The largest specimens of Cherries were seen at the Norton Orchards, managed by Mr. W. R. Elgar, F.S.I. Many of these are of truly magnificent proportions. Some of them have on occasion borne fifty half-bushels of fruit. Trees about forty years old have, in some cases, been top-grafted with better varieties, and in others, cut back and allowed to make fresh growth, success attending both operations. All are grease-banded and thoroughly sprayed, water for the latter purpose being pumped to each plantation from a central bore-hole, in some instances a distance of two miles. Manuring is done by feeding sheep, pigs, and poultry on the land, and by the application of phosphatic and potassic fertilisers and lime. For the propagation of Cherries, young, wild Geans are collected from the woods and grafted very high up so that the stem of the tree is formed from the stock.

Fine Cherry plantations were seen again at the Hempstead Orchards, Bapschild (Messrs. G. H. Dean and Co.). Mr. L. Doubleday, managing director, uses large quantities of bone-meal, which is no doubt valuable for supplying the phosphates removed by continual grazing with sheep. Plant has been installed for crushing and grinding the raw bones on the place. Some of the trees here were planted on land from which brick earth had been removed to a depth of eight or nine feet. They do well on this soil, but tend to die back on areas where the soil is gravelly.

More Cherries in excellent order were inspected on the fruit and Hop farms of Sir Walter W. Berry and Sons at Selling. Baumann's May is here found to be an excellent pollinator for Early River's, but it is very important to get the true variety of the former. An interesting feature on one of these farms is a block of some of the first lot of Bramley's Seedling Apple sent out by the raiser, enormous trees of bush form. In an extensive, young plantation, the East Malling strain of Baldwin Black Currant has been planted; but there are already signs of "nettle head" amongst the bushes. Sheep and bacon pigs are run under the trees. Farmyard manure goes entirely to the Hop fields. Spraying is largely done by means of a steam power plant which delivers the wash through several miles of underground mains.

APPLES AND PEARS.

At Canterbury some very nice plantations of half-standard Apples and Plums were seen on Messrs. George Mount and Sons' nurseries. Both the market plantations and the nursery grounds are kept under perfectly clean cultivation, which was much admired. The Apples show remarkable promise for this season. Pruning is confined to mere thinning out where necessary, and to the cutting away of dead wood on Plums, which are found to do best on Myrobolan stock. Lime-sulphur had been used as a winter wash, and nicotine with arsenate of lead before and after blooming, and the trees looked very free from pests. Bordeaux mixture is considered too risky. The trees are undercropped very thickly with Gooseberries. These are found to do best without pruning, and have certainly made tremendous bushes. Picking must be difficult, but the crop is so heavy that the sacrifice of a little fruit would be a small matter. The Gooseberries had been sprayed very heavily with lime-sulphur, 1 in 40, to prevent mildew. Many of the visitors were surprised to find that this strength caused no scorching. In some districts it would produce much injury. Presumably climate and soil have their influence in this matter. A great deal of shoddy is used on this place, together with other organic fertilisers. Winter manuring is preferred to summer feeding, but alternate year bearing is accepted as unavoidable. Roses and Carnations are grown to perfection under glass, the former in skeleton houses from which the lights are removed in summer.

A contrast to this large place was found in Mr. W. R. Pierce's neighbouring fruit farm of thirty acres, situated on rocky land which was run out and growing nothing but weeds twenty-one years ago. It is now intensively planted with fruit, mainly bush-shaped trees with soft fruit between. Amongst Plums, Switzer, a continental variety, and a very upright grower, is found to be useful, as it thrives where better varieties will not. Early Orleans, too, another Plum not considered to be of high quality, is liked for its regular cropping. Amongst Apples, Langley Pippin does well; and Cousen's Seedling is found to be a good late Gooseberry. Mr. Pierce is convinced that he has overcome Apple blossom weevil in two years by the application of a soil fumigant in October and March. A non-returnable box holding twelve pounds of Apples is largely used as a market package.

On another of the farms under Mr. Doubleday's management, an exceedingly productive plantation of dwarf Apples was inspected. This was the only case seen during the tour of severely-pruned, open-centred trees fruiting as well as those more naturally grown; but the trees in this case have reached an age when they can stand close spurring. This is one of those lucky plantations which crops very regularly, a fact which is attributed to its being practically level with the sea. Pears in excellent order, and holding more fruit than those seen elsewhere, were also noticed. A young plantation has been very intensively planted with Pears, Gooseberries, and Strawberries.

POULTRY UNDER FRUIT TREES.

An interesting example of poultry-keeping in conjunction with fruit-growing was seen on Messrs. F. and T. Neame's farms at Macknade. In some cases, bush fruits are being taken out and the land grassed down for running fowls, which will keep the grass under control. A brooder house with a capacity of two thousand to three thousand chickens is utilised. Inconclusive results as to the value of fowls for controlling Pear midge have been obtained. In some cases the birds seem to have reduced the pest, but in others there has been much damage in spite of the poultry. Ducks, which keep down grass very well, are not liked because they trample down the ground too much. A very nice plantation of bush Pears was inspected, but, unfortunately, Conference is the only variety which has set much fruit this season, though all bloomed profusely. Spraying with Bordeaux mixture to prevent scab is done before and after blooming.

A FINE FRUIT FARM.

A visit to Mr. Spencer W. Mount's plantations near Canterbury, was keenly looked forward to on account of this grower's unique position as a prize-winner at the Imperial Fruit Show. Anticipations were fully realised. Some four-hundred-and-seventy acres are under fruit, with Apples predominating. The plantations give the impression of being run on the soundest commercial lines. The trees are kept perfectly free from insects pests by frequent spraying with a combination of nicotine and arsenate of lead, whilst fungous diseases are prevented by the use of a proprietary Bordeaux paste made in accordance with the Woburn formula. Pruning consists of mere thinning out, treatment which is obviously giving heavy crops of fruit. A young plantation comprised entirely of standard Bramley's Seedling, thirty-six feet apart, intercropped with Black Currants, extends to sixty acres! Most of the older plantations are composed of bush-shaped trees with and without a short leg. All are divided into acre plots, in each of which about fifteen pigs are run winter and summer. This saves all expense of cultivation and most of that of manuring. Mr. Mount is the fortunate possessor of a large cold store in which Apples are kept very successfully. *Market Grower.*

FORESTRY.

CONVERTING COPPICE INTO HIGH WOOD.

Thirty-five years ago, the writer converted several acres of coppice or underwood, growing on the Holwood estate, in Kent, into high woods or standard plantations. When Holwood Park was added to, by the purchase of land at Farnborough, Keston, and Cudham, it was arranged that several of the existing plantations of coppice or underwood, which had not been re-planted since Pitt, the great statesman, owned the property a century-and-a-quarter before, and were in consequence thin and gappy, should be thinned out and the best trees left as the permanent standards.

As one of the principal coppice woods to be dealt with was mainly composed of Oak and Sweet Chestnut, all of similar age, the stumps of which, owing to their having been repeatedly cut back as underwood, had assumed unwieldy proportions, it was found necessary in not a few cases, in order to distribute the standards regularly over the ground, to cut away the worst poles from the stools and leave the straightest and most promising as the future crop. In every case, wherever a suitable tree on its own roots was encountered, of whatever species, it was left as the permanent standard. Previous to this treatment, the coppice wood had been cut over at regular periods of from twelve to sixteen years, and at the time of converting, the trees averaged about twenty feet in height, and were rather thinly distributed over the whole plantation. The standards were left, as nearly as possible, from twenty to twenty-four feet apart, the intervening underwood being grubbed out, so that the least possible trouble in the after management of the plantation would be insured.

The standard trees, the straightest and strongest being chosen for this purpose, were carefully pruned into shape by removing rival leading shoots and ungainly and straggling side branches, such as are to be commonly met with in jungles of underwood. As might be expected from offsets of old stools, the trees grew slowly in height, but being provided with plenty of room laterally, soon become sturdy and developed good heads, in some instances the spread of branches being considerable.

The original coppice plantation, though mainly composed of Oak, also contained a number of seedling Birch, Mountain Ash, White Beam, Beech, and Holly, and in thinning the trees the straightest and sturdiest of these were, so far as possible, retained amongst the Oaks. The plantation for some years afterwards was regularly attended to, in the matter of pruning and cutting away shoots from the stools, and in dealing with a portion lately I found the height of the trees to average forty-five feet, the best specimens being such as were growing on their own roots, or the growth of stumps on which originally the fewest poles were found.

The fact of leaving but a single pole on each stump, most of which originally carried from four to six, enhanced the growth of the remaining one considerably, and some of these have developed into clean-stemmed trees, though it is not at all likely that such will ever attain to normal dimensions. However, old, worn-out coppice plantations have thus, by careful treatment, been converted in a little over thirty years into thriving woods of Oak, Birch and Beech, and though the individual trees are by no means of the best, yet the object aimed at has been successfully accomplished.

In the case of another plantation on the same estate, thinning, as above stated, was carried out, open portions of the road, of which there were many, being planted with various Coniferous trees. This method has proved quite satisfactory and has converted the former hard-wood plantation into a mixed evergreen wood, with the trees fairly evenly distributed all over the woodland. In this case Scotch, Corsican and Weymouth Pines were planted, and have grown much more rapidly than the offshoots from the old stools, and are at present nearly one half taller.

The soil is poor, black, gravelly loam, the natural vegetation being largely composed of Heather, Bilberry and Bracken amongst the commoner plants, and the Winter-Green, Helleborine and Lily-of-the-Valley, whether introduced or indigenous in the latter case would be hard to say. Spanish or Sweet Chestnut, amongst the trees that are usually made use of in coppice plantations and Oak to a lesser extent, are best adapted for leaving as the permanent standards, other kinds, such as the Ash and Alder, being generally of too weak growth to successfully hold their own under such a course of management.

When it is considered desirable to convert coppice or underwood into high forest, the future value of the plantation for such a purpose will be greatly increased by filling up all vacant spaces with stout standard trees, or, still better, by substituting these for the underwood at stated distances apart all over the woodland. By planting such, regularly over the ground, even at far distances apart, a future crop of timber independent of and greatly superior to the original underwood will be insured at a trifling expense.

Converting coppice plantations to high woods is not, however, to be generally recommended, though in certain cases, such as the present, it may be necessary to do so in order to keep the woodlands covered with trees at all times instead of cutting the whole down at stated periods as with underwood, and so retain the amenity of the adjoining park lands. The greatest disadvantages are:—(1) a somewhat irregular crop of timber; (2) a proportion of stunted and badly formed trees; (3) comparatively slow growth from the old stools, and (4) expenses connected with uprooting the intermediate underwood, and preventing the growth of rival stems on the stools from which the permanent standards are growing. By periodical removal of the shoots, the old stools—"stubbs" the name they are known by in Kent and some of the adjoining counties, attain to large dimensions, some three or four feet high, and being of very irregular shapes have a by no means ornamental appearance. From an economic point of view, converting coppice into high wood is not to be recommended, but in so far as appearance is concerned it has its advantages. *A. D. Webster.*

MARKET FRUIT GARDEN.

May was a wet month in my district, with 2.82 inches of rain; but this was less than in the same month of the two previous years. Fortunately there was no frost, and there were dry intervals during which cultivation was done with good effect. Apples bloomed in perfect weather and made a display such as has not been seen since 1919. Bees visited the trees in very large numbers, and the rapid opening of the blossom cheated the Apple blossom weevil to some extent, so that less damage was done than in recent years. By the end of the month most of the bloom had fallen, and the fruit appeared to be setting very well indeed, whilst the trees were healthy. Decidedly the most flourishing in appearance are those that were sprayed in winter with tar distillate wash. In some way this increases the vigour of the trees, as shown by their large, dark green leaves. Bush fruits bloomed well and Red Currants and Gooseberries have set heavy crops. Black Currants are beginning to "run off" and it remains to be seen how much of the fruit is going to mature.

Few Pears and Plums.

The fear expressed in last month's notes as to the fate of the Pear and Plum bloom, which opened in wet and windy weather, has since proved to have been only too well founded. Very little of the fruit has set and crops will be light. Some young trees of Conference and Fertility Pears have, however, set as much as could be expected at their age. Plums are a great disappointment. Czar has set most fruit, but it is now so badly attacked by brown rot that it is doubtful whether it will be able to hold much of the crop. River's Early Prolific also has brown rot, but at present carries a moderate crop. Victoria is healthy and may do fairly well. Pond's Seedling carries some fruit, but Monarch is very disappointing, and President is practically barren. Perhaps it is as well that there should not be too many Plums in a season which promises to be notable for Apples, as the latter sell badly when there are many Plums on the market. At present Plums are looking their very worst; the fruit does not show up and pests and diseases are at the height of their attack. A rather more favourable account of them may be possible later; but it cannot be a heavy crop.

Preventing Scab.

I am very glad that the Apples were sprayed with Bordeaux mixture before blooming (the pink bud stage), as the result seems to have been satisfactory. I found a little scab on the leaves of Beauty of Bath on May 11 whilst spraying was in progress. There has been very little development of the disease since. A second spraying was given after the fall of the petals, but I dare not risk this with Cox's Orange Pippin and Beauty of Bath, which, with me, are very easily scorched. I have not been able to find any efficient fungicide that is quite safe for these varieties after blooming. It is curious that they should be able to withstand Bordeaux mixture before blooming, when the leaves look very tender, and not afterwards. Some years I have sprayed Cox's Orange Pippin twice after blooming without harm, but in other seasons it has led to scorching and defoliation. It is, therefore, too risky. Lime-sulphur is very little less dangerous unless used too weak to be of much value.

It would be a good thing if we could have some settled policy with regard to scab control in this country. At present growers vary much in the methods they employ. Some give a delayed dormant spraying with lime-sulphur and do nothing further. Some use Bordeaux mixture twice after blooming, whilst others are afraid to use it at all. It is quite likely that the leaves withstand fungicides better in one district than in another.

For any grower who aims at a good trade, and specially if he wants Apples fit for packing in boxes, scab control is of supreme importance. I have sometimes mentioned that the countries which send us boxed Apples have a dry climate in which the disease is easily prevented. Most of them have, but Mr. H. V. Taylor, of the Ministry of Agriculture, who recently visited these countries, tells me that Nova Scotia has a climate which is quite as condusive to scab as our own. Most of the growers spray three or four times, and the best of them five or six times. In the *Journal of the Ministry of Agriculture* for December Mr. Taylor gives their plan of spraying. The first application consists of lime-sulphur, 1 to 33, with the addition of arsenate of lime, 2 lb. to 100 gallons. This is put on at 200 lb. pressure when the trees are in the green bud stage. For the second spraying, just before the blossom opens, weaker lime-sulphur (1 to 43) and arsenate of lime are used. The third spray, after the petals have fallen, consists of lime-sulphur, 1 to 50, and arsenate of lime, 1½ lb. to 100 gallons. Two weeks later the fourth spray is given and this consists of Bordeaux mixture (7-7-100) with 5 lb. of lead arsenate paste added to each 100 gallons. In very wet seasons a fifth spray, similar to the fourth, is given two weeks later. The result is that the growers get clean fruit and a high percentage of grade No. 1. How many growers in this country are prepared to do as much work for scab prevention?

Apple Storage Experiment.

An interesting experiment in the storage of Apples was carried out for the Devon County Agricultural Committee last year. Three standard bushel boxes were packed with an even grade of Bramley's Seedling in October. In one box each fruit was wrapped in oiled tissue paper which comes from America and is obtainable in this country. For the second box ordinary white tissue wrappers were used, whilst the Apples in the third box were not wrapped at all. The boxes were stored in an ordinary packing shed. Each contained 120 Apples. They were opened in February after nineteen weeks' storage. It was found that 114 of the Apples wrapped in oiled paper were perfect as compared with eighty-six and forty-seven with ordinary tissue wrapping and no wrapping respectively. Moreover, the oiled paper kept the fruit quite fresh in appearance. Too much must not be assumed from one small experiment, but the result is so striking that the method well deserves further trial. The cost of the oiled wrappers was about twopence per bushel box. *Market Grower.*

VEGETABLE GARDEN.

BRUSSELS SPROUTS.

(Brassica oleracea bullata gemmifera).

The Brussels Sprout, the most recently developed form of Brassica oleracea bullata, is one of the most highly esteemed and generally grown vegetables of the present day. The rugose leaves have a great resemblance to those of the Savoy, but the main difference consists in the production of multiple heads like miniature Cabbages by side shoots from the main stem, instead of one large head at the crown of the plant. It is a plant that succeeds best in a temperate zone, hence it is more at home in northern Europe than in the warmer countries of the south.

Of history it has practically none. Pliny, a great authority on Brassicas, and more recent writers such as Dodonaeus, Miller, and Justice, do not mention it prior to 1759, but by 1793, when it was catalogued by John Mason, it had become a regular article of commerce. Belgium is no doubt the country of its origin, as its name indicates. The Lowland Countries have always been famous for every merchantable member of the Brassica family. Some writers date its appearance as early in the eighteenth century, and as Brussels is not a far cry from the capital of our own country it may have been well known at any rate by those who esteemed, and could afford, imported produce.

Like the Savoy, the bulk of the varieties offered to-day are of dull, darkish green colour, and these are said to be the hardiest. The paler varieties, of which the Dalkeith, when first introduced, was an excellent example, were at one time accounted indispensable, but as the effects of bad weather were more plainly visible on their delicate foliage, greyish-green varieties of the Wroxton type came to be more highly esteemed.

This change of taste has been shown in regard to other varieties, for example, fifty years ago, the Offenham Sprout, at that time the most popular in the Vale of Evesham, was a tall, slender plant with quite small "buttons" not too thickly spread on the stem; to-day, the most popular Evesham variety is a half-dwarf one, with medium- to large-sized solid sprouts, which completely envelop three-fourths of a robust stem, and these are cleared with very few pickings, continuous supplies being more easily obtained by successional sowings.

As evidence of its true Brassica parentage, it may be interesting to know that about forty years ago Mr. George Taber, founder of the seed-growing department of the Cooper-Taber business, had a plant of the Aigburth type with sprouts of a deep red colour. This was shown by him to many members of the seed trade (including the writer), and the opinion was expressed by Mr. Taber that it would make a novel and attractive pickle, even if the colour were objected to for use as an ordinary Sprout; but many felt that it would be a long time before it usurped the position held by pickled Walnuts and Onions in aiding the disposal of the *viande froide*—the true British housewive's *piece de resistance* on St. Monday. As far the writer knows nothing ever came of the Blood Red Sprout.

As regards the number of varieties in existence, their name is legion, but they may all be regarded as variations (some very pronounced) of six clearly defined types. The chief points for consideration are, height of plant, earliness or otherwise, and size of individual sprouts; solidity being in all cases a *sine qua non.*

Attempts have been made to cross the Brussels Sprouts with other Brassicas, and some of the results, such as Albert, Dalmeny, and Earley's Hardy Green Kale, had a certain vogue for a time, but hardly any up-to-date catalogue quotes them to-day. The genuine article satisfies most people.

On the subject of size, the Belgians prefer a small Sprout; France prefers a Sprout of medium size (although President Carnot was one of the earliest of the large and rather soft varieties); Germany esteems medium to large, and in our own country private growers prefer such varieties as Dwarf Gem, while in the mining and manufacturing districts nothing smaller than a good solid Aigburth will suffice.

Samples of ninety-five stocks were sent to Wisley for trial in 1923, to fifteen of which awards were made as follow:—*Award of Merit*; Solidity, from Messrs. Wheeler, Warminster; Darlington, from Messrs. Kent and Brydon; One and All, from Mr. Heinemann, Erfurt. *Highly Commended*; Half-long Paris, Messrs. Toogood; Standard (Sharpe's), Messrs. Barr and Sons; Walton Dwarf, Nos. 2 and 12, Messrs. Rowlands and Toft. *Commended*: Dwarf Selected and Early Tall Improved, Messrs. Zwaan and de Wiljes; Selected (Medium) and Selected (Large Pale), Mr. G. Cooper; Early Giant, Mr. Clucas; Walton Dwarf, No. 8, Messrs. Rowlands and Toft; Masterpiece, Messrs. Harvey and Masters; and Ideal, Messrs. Dickson, Brown and Tait.

The varieties deemed worthy of Awards were those with medium to small sprouts. A market grower's selection would probably have included more of the larger varieties of Aigburth, Goliath, Evesham Giant, or standard type, and the connoisseur would certainly have voted for Dwarf Gem. There are doubtless a score of other equally good varieties in existence, which were not submitted for trial, so that buyers who obtain their supplies from reliable sources should be able to obtain quite easily all they require.

As America is indebted to Europe for the Brussels Sprout, a few facts respecting its culture in that country may be of interest. As a general rule they are not so highly esteemed as in England, and are only coming slowly into their own. The dryness of the climate may have something to do with this, but as the plant is amenable to cultural influences, an effort was made by the Long Island Cabbage-seed growers to develop a strain free from the defects of the imported article, but in the homes of the great mass of the people it has not "caught on." The summers are too hot, and the winters too cold, to allow of the development to which we in the temperate zone are accustomed. Mr. C. L. Allen in his valuable work on *Cabbages*, etc., states, "the Sprouts are sold by the quart; that one quart per plant is a good crop; but that the Long Island variety will produce twice that quantity, say 10,000 quarts per acre; so the market grower will find the culture a paying proposition." Burpee's *Cook Book* gives the following recipe: "Lay one quart of Brussels Sprouts in cold water for one hour. Drain, put over fire in saucepan of boiling water and boil thirty-five to forty minutes without a cover. Drain and cover with sauce: or serve with salt, pepper, two tablespoonsful melted butter, and one tablespoonful lemon juice."

The above with a floury Irish Potato and a liberal helping from the breast of an American Turkey would be most appropriate fare for Thanksgiving Day! *S. B. Dicks.*

HOME CORRESPONDENCE.

Apple-leaf Scorch.—In reference to the statement that this complaint is caused by lack of potash in the soil, it may be of interest to mention that in a fruit plantation of Wye Agricultural College, Kent, fertilizer trials were carried out yearly for some ten years on Apple and Plum trees and on Gooseberries. The trials were discontinued because the results were not so well marked as had been expected; but there was one fact very evident, viz., that in the plot which did not receive potash, although receiving nitrogen and phosphate, the leaves of all three fruits were less healthy and robust than in any of the other plots—the Apples having leaf scorch and the Gooseberry foliage being more yellow and singed—the fruit was smaller than in any of the plots. The flowering of the Apples also seemed to be a trifle later than in the other plots. What seemed difficult to understand was that in the case of trees on the plot receiving no manure the foliage was perfectly healthy and the growth of the trees better and the fruits more numerous and larger than on the plot receiving nitrate and phosphate but no potash. *Cecil H. Hooper.*

Potato Breeding.—On page 303 there appears some additional statements on the above subject by Mr. G. M. Taylor. I do not know if a reply on my part is called for; I have stated my case and it is for your readers to judge for themselves. However, Mr. Taylor has grossly misconstrued some of my assertions. I stated that I was aware that numerous breeders sent worthless seedlings to official stations. Mr. Taylor has concluded that reference is made to all engaged in Potato breeding. This is very far from being the case. A number of breeders—although I am not informed that Mr. Taylor is included in the category—submit, I understand, valuable productions. It is Mr. Taylor, then, who is guilty, and not I, of maligning the efforts of our industrious breeders. On page 207 Mr. Taylor, writing on further Potato improvement, states: "This can only be done by the discovery of some species of Solanum, or something allied to it, which will breed with the modern Potato or any of its ancestors." What are "its ancestors"? I asked him what he expected from the assimilation into the Potato of wild Solanum blood. He now replies "nothing." What does he mean? Does he know himself? "New blood, according to him, is not to be found in "wild" Solanum species, yet it exists in "some species of Solanum or something allied to it." Surely, his statements are not particularly clear! The superior tone adopted by Mr. Taylor is not quite in keeping with the rules of good controversy.

His attitude is such that one might conclude that I was only a theorist and he an essentially practical man. He lacks the lucidity of expression which might make the lessons of his "practical experience" of any value on paper. I must point out, however, that my observations on the Potato have been made, I should imagine, over a much wider field than those of Mr. Taylor. His remarks concerning the beneficial effect a few years' practical breeding would have on my ideas are quite beside the point. I have already had that and more, but I do not feel it incumbent on me to inform him always of any work I have on hand. I have endeavoured to set out clearly my ideas concerning the "new blood" theory, and I decline to discuss this particular point further. I have used several species of the Solanum in attempts at breeding, and I do not write from the practical experience of others, but from my own. *Thomas P. McIntosh.*

Ranunculus bulbosus flore pleno (p. 402).—This plant is certainly rare, both in the wild and cultivated states: after nearly seventy years' observation of both wild and garden plants I had never seen it until last summer when my wife found a small plant by the side of the Portsmouth Road near Wisley. The patch was about four inches high and bore two or three flowers. There were plenty of Buttercups near at hand but no more double ones and nothing to indicate why this one should be double. The specimen was taken up and planted here; the foliage disappeared entirely early in the winter, but it came up again and is now a fine, strong plant with seven main stems more or less branched, and has produced over fifty flowers. It is two feet high and about the same in diameter. The earliest flowers were green centred and proliferous, as mentioned on p. 402; the latest flowers are much better, seven-eighths-of-an-inch across, perfect in formation as a Show Dahlia and of a good yellow colour. It is worthy a place in any herbaceous border and is the only plant I have which has benefited by the exceedingly wet winter. It is mentioned by Nicholson—*Century Supplement to Dictionary of Gardening*, p. 632—and has an * sign as a desirable garden plant. He also mentions double forms of R. repens and R. acris: the latter is common enough and much inferior to R. bulbosus fl. pl. Robinson's *English Flower Garden*, ed. 1900, p. 758, mentions it, also two varieties of R. repens, one neat the other untidy. Johnson's *Gardeners' Dictionary*, ed. 1870, mentions double forms of R. acris and R. repens but does not include R. bulbosus. Loudon's *Encyclopaedia of Plants*, dated 1829, includes double forms of R. acris and R. repens but only the single form of R. bulbosus; double forms of all three are mentioned by Miller—*Gardeners' Dictionary*, ed. dated 1754. Miller states that the double form of R. bulbosus grows eight or ten inches high and produces small flowers coming out of the middle of each other and is for that by some called the Childing Crowfoot. As no seeds are produced I was uncertain whether my plant would increase by division or eventually die away, but I now find indications of four new bulbs at the base. *W. H. Divers, V.M.H., Westdean, Hook, near Surbiton.*

The Shrinkage of Soil.—It is remarkable how soil shrinks during dry weather; a lawn that has been re-turved recently has apertures quite two inches wide between the turves, due to the recent hot, dry weather, although when the sods were laid they were placed closely together. The shrinking of soil, and especially clay land, results in very great harm to garden crops, but where the hoe has been used freely to promote a fine tilth on the surface, trouble from cracking is largely obviated. As much moisture is lost from the soil when the surface cracks badly in dry weather, hoeing must be regarded as one of the most important operations in spring and early summer. *T.*

SOCIETIES.

ROYAL HORTICULTURAL.

June 9 and 10.—The special feature of the fortnightly meeting was intended to be a show of Paeonies, but, in a somewhat backward season, the date proved to be too early, so that exhibitors of Paeonies were few. But Irises were shown in such abundance and of such high quality as to dominate all the other flowers. The disposition of the various exhibits combined with artistic individual arrangements to produce a very pleasing effect in the hall. Considering the large quantities to be seen in the chief flower markets, Roses and Carnations were fewer than might have been expected. Sweet Peas were excellently shown, and there was a pleasant variety of general border flowers. The Floral Committee recommended an unusually large number of Awards of Merit, and from very many new Irises selected the best for trial at Wisley. There were very few Orchids, and no fruits or vegetables.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the Chair), and Messrs. Gurney Wilson (Hon. Sec.), C. J. Lucas, Jas. O'Brien, A. Dye, J. Wilson Potter, H. T. Pitt, F. W. Flory, J. E. Shill, H. E. Alexander, Fred. K. Sander, Charles H. Curtis, Henry H. Smith, J. C. Cowan, T. Armstrong, Stuart Low, and F. J. Hanbury.

AWARDS OF MERIT.

Miltonia vexillaria var Rajah.—A striking variety with flowers of medium size and pale rosy-mauve colouring, but the chief feature of the variety is the large mask on the lip, which is of intense dark, blackish crimson colour, and occupies about half the area of the labellum. Shown by Messrs. Flory and Black.

Odontoglossum crispum var. Renown.—A fine form of an old and favourite Orchid. The blooms are large, of good shape, with fringed margins, and white, save for the yellow base and disk of the lip and usually one red-brown spot below the yellow area. Shown by J. J. Bolton, Esq. (gr. Mr. Lyne, Claygate).

PRELIMINARY CERTIFICATE.

Odontioda Opal, Gerrish's var. (*Oda. Cooksonae* × *Oda. Eximillus*).—A large flower, of good shape, with deep red sepals and petals marked with deep rose and a rose and red lip. Shown by R. Gerrish, Esq. (gr. Mr. W. Sorrell), Milford Manor, Salisbury.

GROUPS.

Messrs. Sanders set up a very interesting group, the back line of which was composed of Thunias, chiefly the elegant T. Marshallianum; Oncidium Marshallianum was also very effective and there was a good example of Dendrobium thyrsiflorum with a pair of large, pendant racemes; Vanda pumila, a rare plant with white flowers, Cypripedium bellatulum and Bletia verecunda were attractive. Other notable plants were those of Bulbophyllum Lobbii var. Colossus, Masdevallia tridactylites, Masdevallia Harryana versicolor, Oncidium Papilio majus, and the handsome, finely-formed Odontioda Chantecler.

In Messrs. Stuart Low and Co.'s contribution there were capital examples of Laelio-Cattleya Aphrodite, Brasso-Laelio-Cattleya Saundersonii, with a metallic lustre on its violet-tinted mauve flowers; Odontioda ornata with violet-rose edging to its red spotted flowers; O. Cooksoniae, the graceful O. Vuylstekeae and O. Brilliant; with Anguloa Clowesii and Dendrobium suavissimum.

Messrs. Flory and Black showed beautifully grown Miltonias, notably M. vexillaria var. Doris, represented by five fine specimens; and M. v. var. Rajah, with a wonderfully large and dark, almost black, mask on the soft rose-coloured lip.

A pleasing little exhibit of botanical Orchids for which Sir Jeremiah Colman, Bt. (gr. Mr. J. Collier), Gatton Park, Reigate, received a Vote of Thanks, proved of great interest to Orchid lovers. It contained Cirrhopetalum robustum with a spike of a dozen flowers; Masdevallia civilis, M. elegans, the quaint Megaclinium Imschootianum Polystachya paniculata, the long, dark stemmed Bulbophyllum Penicillium, the blue Dendrobium Victoria Reginae and the green Platyclinis cornuta.

Among numerous small exhibits we noted Brasso-Laelio-Cattleya Jupiter, of fine form and colour, from Messrs. Cowan and Co., Southgate; Odontioda Opal, Gerrish's var., of very fine red colouring, from R. Gerrish, Esq. (gr. Mr. Sorrell), Milford Manor, Salisbury; and the bright Laelio-Cattleya Canhamiana var. Mrs. Monteith Ogilvie from Mrs. M. Ogilvie (gr. Mr. Findlay), Kensington. Cattleya Queen Mary (Mendelii alba × Warneri alba) with seventeen lovely white and fragrant flowers, was shown by Sir H. S. Leon, Bt. (gr. Mr. J. T. Barker), Bletchley Park, Bucks. A Cultural Commendation was granted.

Floral Committee.

Section A.—*Present*: Mr. Henry B. May (in the Chair), and Messrs. J. F. McLeod, A. Turner, H. J. Jones, Donald Allan, W. H. Page, J. M. Bridgeford, Hugh Dickson, Montagu C. Allwood, J. B. Riding, F. Streeter, E. R. Janes, Chas. E. Pearson, G. W. Leak, D. B. Crane, W. B. Gingell, and W. Howe.

Section B.—*Present*: Mr. C. T. Musgrave (in the Chair), Sir Wm. Lawrence, and Messrs. Gerald Loder, G. Reuthe, G. Harrow, F. G. Preston, E. H. Wilding, W. B. Cranfield, C. Williams, Amos Perry, Clarence Elliott, R C. Notcutt, R. W. Wallace, T. Hay, and G. Yeld.

AWARDS OF MERIT.

Salvia Harbinger.—A sturdy, free-blooming variety, carrying large, scarlet flowers in goodly spikes. A fine variety for summer bedding or for pot culture. Shown by Messrs. Watkins and Simpson.

Ageratum Little Blue Cloud.—A low-growing, densely bushy, compact variety, with large, clear blue flowers; a fine plant for bedding, and wherever a neat, low carpeting or edging of blue is needed. Shown by Messrs. Dickson and Robinson.

Carnation Froyle Beauty.—A broad-petalled border variety of good size. The colour is a mixture of salmon and apricot. Shown by Mrs. P. B. Summers, Froyle Place, Alton.

Heuchera Pink Delight.—A fairly tall-growing variety, graceful and of soft pink colouring, but apparently not differing materially from others in commerce. Shown by Mr. G. Miller.

Pyrethrum Avalanche.—A promising white variety with several rows of ray florets, but not double in the usual sense of the word. It should become popular as a cut flower for market. Shown by Mr. H. Robinson, Hinkley.

Hydrangea Neige Orleanaise.—The immense heads of big "flowers" are very effective, substantial and clear white. Shown by Mr. H. J. Jones, Lewisham.

Hydrangea Pasteur.—Another large-flowered variety carrying big heads of pink blooms, some of the segments having a tiny green tip. Shown by Mr. H. J. Jones.

Rhododendron myrtilloides.—This was the most distinct new plant shown on this occasion. The small, pendant, campanulate flowers are scarcely an inch long, pink, with whitish tube, and carried on long, pale pedicels. The leaves are bright, shining green, small, and produced freely on the twiggy growths. As shown, the plant is barely six inches high and has a very charming appearance. R. myrtilloides was found by Mr. F. Kingdon Ward (K.W. 3173, according to the label), in 1914, on the Nmai divide in north-east Burma, at an altitude of fifteen thousand feet. The flowers have been described as Plum-coloured, and we understand there is a deeper hued form than the one exhibited. Shown by L. de Rothschild, Esq. (gr. Mr. A. Bedford), Exbury, Southampton.

Echium Wildprettii.—A giant species of Bugloss hailing from the Canary Islands. It grows from two feet to three feet high, and has a dense spike of reddish flowers. Echium Wildpretii formed the subject of the coloured plate in *Gard. Chron.*, June 7, 1919. Shown by Mr. C. T. Musgrave.

Cistus ladaniferus immaculatus.— A lovely flowering shrub producing large flowers of pure white instead of the spotted form. Shown by Sir Wm. Lawrence, Burford Lodge, Dorking.

Rhododendron Mrs. A. C. Kenrich.—A fine rose-pink variety, the large blooms making up a bold truss. Shown by the Executors of the late Mr. Anthony Waterer.

Rhododendron Mrs. William Watson.—A lovely variety with big blooms borne in a large and shapely truss. The lobes of the flowers do not overlap as in many modern sorts, but this adds to, rather than detracts from, the beauty of the variety. There are a few brown spots on one segment of each flower, and these are distinctly imposed, as though printed ; otherwise the flowers are pure white. Shown by the Executors of the late Mr. Anthony Waterer.

Rhododendron Lady de Rothschild.—The big, white, rounded flowers are carried in large trusses, and there are a few purplish spots on one segment. A very pleasing variety. Shown by the Executors of the late Mr. Anthony Waterer, Knap Hill.

Rhododendron Ida Waterer.—A showy variety with large, finely frilled blooms of pleasing violet-tinted rose colour. Shown by Messrs. Waterer, Sons and Crisp.

Rhododendron Ted Waterer.—The flowers are wide and flattened, white, bordered with deep lavender and with yellow spotting on one segment. Shown by Messrs. Waterer, Sons and Crisp.

Rhododendron discolor hyb.—The flowers of this showy Rhododendron are frilled, widely expanded at the mouth, but fairly long-tubed. The colour is a rich pink. Shown by Messrs. Waterer, Sons and Crisp.

Rhododendron Monstrous.—The name of this variety is not a pleasing one, except that it may denote the immense size of the handsome trusses. The colour is a lovely shade of rose-pink, but in some lights it is violet-rose. Shown by Messrs. Waterer, Sons and Crisp.

Irises for the Wisley Trials.

The following tall, bearded Irises were selected for trial at Wisley:—

Iris Flammenschwert (Flaming Sword).—A very showy variety, with clear nankeen yellow standards and golden-edged falls of crimson hue with white markings. Shown by The Orpington Nurseries, Orpington.

Iris Mystic.—A dainty variety with delicate white standards and white falls, feathered on each side at the base with bright rose. Shown by The Orpington Nurseries.

Iris Princess Orra.—This variety has very broad standards and falls, which are blush white over the central area, with a wide bordering of mauve-blue composed of spots and veins of colour. Shown by The Orpington Nurseries.

Iris Salawat.—A handsome seedling from Dominion. The standards are clear metallic blue and the standards of deeper blue with a light golden crest. Shown by Mr. G. P. Baker.

Iris Shalbruz.—A large and handsome flower with broad blue standards and wide falls that are rich violet blue with purplish shading at the base. Shown by Mr. G. P. Baker, Bexley.

Iris Mesa.—The big blooms of this variety have wide, bluish mauve standards and deep purple, red based falls and a golden crest. Said to be the result of crossing Neptune and Dominion. Shown by Mr. G. P. Baker.

Iris Imperateur.—Another big-flowered variety with colouring somewhat similar to the one previously named, but with a paler crest. Shown by The Orpington Nurseries.

PAEONIES.

There were only two exhibits of Paeonies in competition for the Harding Cup, which did not appear to have been awarded. Sir William Lawrence, Bart., Burford Lodge, Dorking, had half-a-dozen vases of very good blooms amongst which the vivid colouring of the single variety, Fire King, was very prominent. Paeonia albiflora rosea, single, blush pink, and Gloire de Chas. Gomboult, a well formed, double creamy white with pink guard petals, were also of considerable merit. Amongst the six varieties staged by Mr. W. B. Cranfield were Wild Rose, single pink, and Lady Carrington, pale blush, and of good double form.

The only collection of Paeonies was staged by Messrs. Kelway and Son and this was placed in the Orchid annexe. This proved to be an advantage in that lovers of these handsome border flowers were able to view the excellent collection in comfort. The single-flowered varieties were especially good and they combined delicacy and beauty of colouring with considerable substance of petal. The principal varieties were Dorothy, satiny shell-pink ; Letitia, soft pink ; Victor Hugo, crimson, and Kingsbury, rich deep pink. Amongst the double-flowered varieties we noted Sunrise, blush pink ; Lady Stradbrooke, medium pink ; Helen Glover, white, and Rosemary, deep blush, all of which were of perfect form and of fresh colouring. In addition to the Paeonies Messrs. Kelway and Son showed excellent Pyrethrums and Lupins. Mr. F. Gifford had a good batch of Paeonia albiflora grandiflora.

IRISES.

As we have stated the Bearded Irises were a very important feature of the show, and seldom, if ever, before have these valuable border flowers been shown in such quantity and of such high quality. Just inside the entrance Messrs. George Bunyard and Co., had a delightful arrangement of the best varieties, and amongst these we selected the following as being deserving of especial mention. Dalmatica, a tall Pallida variety ; Rotura, an even more robust spike of lovely blue shades ; Ambassadeur, reddish violet, with velvety falls and bright yellow beard ; Cluny, pale lilac, with deeper falls marked with brownish purple ; Ed. Michel, a handsome wine-red self-coloured flower ; Rosalind, rosy lavender with lavender coloured falls, and Neptune, of tall habit with brilliant blue standard and rich purplish falls. Amongst the various smaller flowered varieties Iris sibirica Perry's Blue, which is dwarfer in habit, rather larger in flower and of deeper colour than other types, was of great merit.

On the opposite side of the gangway Mr. Amos Perry had a fascinating collection af Irises which included Mary Gibson of free habit : Duke of York, quite four feet high with fine mauve-blue colour stained with bronze and falls of a softer shade of the same colour ; Marjorie Tinley, of similar colouring ; R. W. Wallace ; Mrs. H. F. Bowles, of uncommon rich crimson colouring while the falls are edged with brown and shot with purple, and Mary Sadler.

Chief among the many varieties attractively shown by Messrs. Waterer, Sons and Crisp, were Princess Victoria Louise, primrose yellow, with reddish purple falls which have a narrow primrose edging ; Prince of Orange with madder brown falls ; Fro, bright yellow with plum coloured falls reticulated with pale yellow ; Delila, Cluny, Rhein Nixe, a large white flower with violet-purple falls lightly edged with white, and Sweet Lavender, a distinct flower of rose-lavender shading.

Many excellent sorts were displayed by Messrs. Barr and Sons, who included Ed. Michel, Fairy, Ambassadeur, Duchess of York, Souvenir de Madame Gaudichaud, and Princess Victoria Louise, of those already mentioned as well as such other sorts as Ballerine, silvery-lilac with silvery-purple falls ; Juniata, silvery violet with rich violet-purple falls ; Viola, violet-blue self, and Zouave, white standards, and falls veined with rosy lilac.

Amongst the collection set up by Mr. G. G. Whitelegg were Neptune, Alcazar, a handsome deep blue flower with velvety-purple falls ; Lord of June, pale lavender-blue, with deeper falls ; Ambassadeur and Emperor of India.

A very attractive collection was contributed by Messrs. R. W. Wallace and Co., and this included Quaker Lady, Pioneer, Roseway, Corida, Ann Page, Florence Wells, Elinor, and Susan Bliss. The last named is probably the pinkest Iris yet introduced. Volumnia, a Caterina seedling, is of beautiful pale heliotrope colour with a silky sheen ; Swazi, of reddish violet colouring, and Mistress Ford, reddish purple, with red-violet falls are splendid novelties.

The Irises from The Orpington Nurseries included excellent spikes of Ambassadeur, Prosper Langier, Asia, Red Admiral, Harmony, Montezuma, Imperator and Iris King. Messrs. Lowe and Gibson included Corida, Romany, Camelot, Quaker Lady and Maxwell in a good collection and also showed vases of border Carnations, Sheila Gibson and A. St. Clair Amos.

MISCELLANEOUS.

General border flowers were shown by Messrs. Bakers, Ltd., who had Iceland Poppies, Irises and Lupins. Messrs. R. Tucker and Sons included Campanula garganica and its variety hirsuta and C. muralis major with their alpines. Messrs. Skelton and Kirby had Geums, Lupins, and Gargania splendens ; Messrs. W. H. Rogers and Son included an attractive batch of a pink Mesembryanthemum, Dianthus preziosa and double-flowered Iceland Poppies. Mr. G. A. Miller had general border flowers.

In an attractive rockery Mr. F. G. Wood displayed Mimulus Coronation of vivid colouring, Achillea Lewisii and A. argentea. The Chalk Hills Nursery Company showed Thalictrums and Irises. Messrs. Harkness and Sons included Lupins in their exhibit ; Messrs. Maxwell and Beale had seasonable flowers and Messrs. B. Ladhams, Ltd., included a glowing vase of Lychnis, with Lupins and Oriental Poppies.

Lupins, chiefly of polyphyllus strains were largely shown, both as special groups and in association with other border flowers. The Maytham Gardens had an attractive collection of named varieties amongst which prominence was given to a batch of the glowing pink and red shaded Maytham Sunrise ; Glory, of rich pink shades, and Maytham Beauty were also admirable. Mr. H. Marsham showed a number of spikes of the strain in which he specialises, while Messrs. J. Cheal and Sons had a few vases of Orange Queen, of buff-orange colouring.

A large group of named Lupins was displayed by Mr. G. R. Downer, and these were of an excellent strain of good strong spikes made up of large flowers in fresh and distinct colours. Under the clock, Mr. T. Carlile had such named sorts as Delight, a pink bicolor ; Happiness, dark blue, and Sunshine, rich yellow. Messrs. W. Prichard and Son also had an admirable collection of Lupins. In association with their splendid new Ageratum Little Blue Cloud Messrs. Dickson and Robinson had a dozen or so vases of splendid, named Lupins.

Long-spurred Aquilegias of an excellent strain were staged by Messrs. Dobbie and Co. These were arranged in such colourings as blue and white, orange and yellow, buff and yellow and pure yellow. Mr. H. Hemsley showed Lupins, Anchusas and other hardy flowers.

A fine group of hardy flowers was arranged by Mr. J. C. Allgrove. Three large stands contained magnificent spikes of Eremurus robustus Magnificent, a new variety which is quite double the size of the type and bears flowers of a lovely shade of pale pink, set off by orange anthers. Anchusa Dropmore variety, A. Opal, and A. Pride of Dover were also well shown. The last-named is a dwarfer form of the Dropmore variety and bears larger flowers of a clearer shade of blue. Thalictrums in variety were represented and amongst the Paeonies were Paeonia lutea, a Chinese species with foliage like that of P. Moutan and flowers similar to those of Nuphar lutea; P. Delavayii has finely cut leaves and bears deep crimson, fragrant flowers; P. lutea, as sent out by Lemoine, bears no resemblance to the true species; the flowers are of rich pink colour with a cluster of rich yellow stamens; P. The Bride, a large pure white flower is another fine variety.

Some early Delphiniums of merit were staged by Messrs. Blackmore and Langdon. The best were Blue Bird, of deep shade; Blue Princess, of pale, almost lavender, blue; Lord Derby, rosy-mauve; and Edward Bromet, an improved Rev. E. Lascelles. In a neat group, The Swanley Horticultural College showed Clarkias, Campanulas, and Nemesias, while the Misses Hopkins had seasonable flowers, and included a plant of the Chives which, when in flower, has distinct garden value. Mr. G. Reuthe included a useful rock garden plant in Saxifraga cochlearis × S. longifolia amongst his collection of alpines, and he also showed various Rhododendrons and Azaleas. Messrs. Rich and Co. had Lupins, Iceland Poppies, and Violas.

An excellent group of Rhododendrons was shown by Messrs. Waterer, Son, and Crisp. These were mostly large plants bearing plentiful trasses of good blooms and included Ted Waterer, Ida Waterer and Monstrous, which received Awards of Merit. Other valuable sorts were Eileen, a compact truss of flowers which have a distinct pink edge; Elsa Crisp, a blush pink with deeper margins, and Philip Waterer, a truss as large as that of Pink Pearl but with rather flatter pips of stippled pink colour. The style of the truss suggests Aucklandii blood. It is quite hardy and of great decorative value. The several R. discolor hybrids showed delightful variations of pink colours. In the Orchid annexe Messrs. L. R. Russell, Ltd., included well-flowered Azaleas with Clematis and Japanese Maples.

Mr. H. J. Jones again showed a splendid collection of the Hydrangeas he grows so well. H. Parsival is one of the best pinks, a shade of colour also represented by Yvonne Gayeux and Elma. Neidersachen bears large trusses of rich blue and Rhinegold has large flowers of similar shade. Along the front of this excellent collection there were immense heads of the varieties W. Pfitzer and of Le Marne.

A tastefully arranged group of a large number of plants of Crassula coccinea minor with a few Cocos Weddeliana and Liliums was shown by Baron Bruno Schröder (gr. Mr. E. J. Henderson), The Dell, Egham, which illustrated the highest cultural skill. Messrs. Stuart Low and Co. showed Hippeastrums, Leptospermum Nicholii and Erica Cavendishii, full of flower and of useful size. Messrs. W. J. Godfrey and Son had cut trusses of the Fancy and Regal Pelargoniums they showed so well at Chelsea. The Queen, pink; The Gypsy, crimson shade; Conquest and Gladiator, of scarlet colouring, were admirable. They also showed a variety of Oriental Poppies.

Sweet Peas of great merit were shown by Messrs. Robert Bolton and Son. Their novelties included Royal Pink, shades of pink and rose; Peggy, vivid crimson; Gold Crest, pale orange; Wizard, deep orange; Wembley, pearly lavender; Matchless, cream; and Black Bess, the darkest of all Sweet Peas. Constance Hinton, which is still the best of the whites, was also well shown. Messrs. Alex. Dickson and Sons also had a good collection of Sweet Peas, and they included Constance Hinton, with Crusader, orange-salmon; Daisybud, pale pink; Elegance, blush-pink; Gloriosa, orange-scarlet; Lucifer, salmon-cerise; Magnet, cream-pink; Mermaid, lavender; Royal Scot, cerise-scarlet; and Wonderful, of similar colour.

In an attractive corner group Mr. Charles Turner showed good Polyantha Roses. The chief varieties were Juliana, soft pink; Chatillon Rose, of wild Rose colour; and Ethel, a Wichuraiana hybrid. Mr. George Prince has large vases of Allan Chandler, of rich crimson colour; Pax; Victoria, an immense, semi-double flower of deep pink colour and distinct fragrance; Cupid, and Austrian Yellow. Mr. Pemberton showed Star of Persia, Harrisonii, and Château de Clos Vougeot.

Carnations were shown by Mr. C. Engelmann, Messrs. Allwood Brothers, Messrs Stuart Low and Company, and Mr. J. C Beck, who staged a group of Mrs. Vlasto, a fancy variety of lilac and white colouring, and pleasantly fragrant.

Mr. C. H. Herbert had a selection of his excellent Pinks, which included Bridesmaid; Mrs. J. Woolley, soft, salmon-pink; Red Indian, cherry-red; and Model, soft, rosy-pink.

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix (Chairman), J. Cheal, Geo. F. Tinley, J. C. Allgrove, A. C. Smith, W. H. Divers, Edwin Beckett, A. N. Rawes, E. A. Bunyard, and A. Metcalfe.

There were no exhibits before the Committee on this occasion, but a considerable amount of time was spent in revising the schedule of the special fruit show to be held in the autumn.

BATH AND WEST AND SOUTHERN COUNTIES AGRICULTURAL.

May 23–June 2.—The Bath and West and Southern Counties Agricultural Society's show was held at Maidstone on these dates. The day preceding the opening was very unfavourable, incessant rain falling throughout. On the opening day conditions were more propitious. The horticultural section was exceedingly good. The exhibits were of high quality and general effectiveness, and were grouped in a large tent with overflow groups out-of-doors in well-shaped beds cut out in grass.

Messrs. Arthur Charlton, Tunbridge Wells, displayed many well-grown flowering shrubs; also exceedingly fine forms of Japanese Maples, with a fringe of Funkia ovata marmorata aurea and F. ovata medio-picta.

Messrs. R. Wallace and Co., Tunbridge Wells, made very pleasing designs cut out of the grass, and planted them with flowering shrubs, etc. Messrs. W. and A. Clark, Dover, contributed a rock and water garden, in which were Paeonies, Irises, and alpines, a central bed of Geranium tricolor var., being very effective.

The tent contained a most glorious display of Rhododendrons from Messrs. Waterer, Sons, and Crisp, Twyford, which included well-grown specimens of Pink Pearl, Cynthia, Boule de Niege, and John Waterer.

Mr. Amos Perry, Enfield, displayed many of his firm's new hybrid bearded Irises in numerous varieties, such as Marjorie Tinley, Wayland Cowley, Mrs. Marion Cran, Crimson Glow, Mrs. Fred Stern, Lady Chas. Allom. Mr. Perry also showed numerous varieties of Hemerocallis hybrids. We noticed a pretty, blue, bulbous plant, named Ixiolirion tartaricum, which was very telling; also Eremurus Elwesianus, and its variety albus, and E. Himrob, backed by Japanese Maples and tall grass.

Messrs. Toogood, Southampton, and Messrs. Carter and Co., Raynes Park, both showed collections of vegetables of a high standard of quality.

Messrs. Dobbie and Co., Edinburgh, contributed many fine bunches of Sweet Peas.

Mr. H. J. Jones, Lewisham, and Messrs. Jarman, Chard, had Hydrangeas in many shades; the latter firm also contributed forms of Viola cornuta, including Lavender Queen, and purpurea; also annuals.

Messrs. Maxwell and Beale, Broadstairs, had a miniature rockery and water garden. Messrs. Wm. Cutbush and Son, Barnet, arranged a most effective group, consisting of Polyantha Roses, blue-flowering Hydrangeas, etc.

Messrs. Allwood Bros., Haywards Heath, and Mr. C. Engelmann, Saffron Walden, contributed Carnations.

Messrs. W. H. Rogers and Sons, Ltd., Red Lodge Nursery, Southampton, showed alpines, and Messrs. Bakers, Wolverhampton, had an artistically-arranged group of alpines, backed by Lupinus, Primulas, Azaleas, etc.

Messrs. W. J. Godfrey and Son, Exmouth, showed many varieties of Pelargoniums, Poppies, and various annuals.

Messrs. Stuart Low and Co., Bush Hill Park, Enfield, exhibited Hippeastrums (Amaryllis) in variety, Carnations, Odontoglossums, Cattleyas, Dendrobiums, etc.

Messrs. W. Bray and Son, Okehampton, showed Rhododendrons, in good form, and Messrs. Reamsbottom, West Drayton, exhibited their fine strain of St. Brigid Anemones.

Messrs. English and Son, Gloucester, showed dwarf and climbing Roses, while Messrs. Rich and Son, Bath, contributed annuals and numerous herbaceous perennials, and Mr. Frank Harnett, Maidstone, displayed Roses and Violas.

Messrs. George Bunyard and Co., Maidstone, exhibited a fine collection of fruit; also cut herbaceous flowers in which Iris Black Prince was conspicuous.

Mr. H. Marcham, Borough Green, Kent, contributed a good strain of Lupinus polyphyllus.

FRENCH EXHIBITION OF DECORATIVE ART.

Like every self-respecting show, the Exhibition of Decorative Art now being held in Paris was opened in an unfinished condition, in the midst of a mass of packing cases and rubbish. However, the French National Horticultural Society had provided for the first temporary horticultural exhibition—which coincided with the opening date—a very attractive little display, in the pavilion reserved for the purpose; most of the big growers in and around Paris sent very creditable contributions.

The central space was occupied by Messrs. Vilmorin-Andrieux et Cie, of Verrières-le-Buisson, who staged two large masses of hybrid Cinerarias, in the centre of the group being the fine red variety Matador. They also showed two little beds of mixed spring flowers—Aubrietia, Saxifraga, Viola, Arabis, Primula, etc.—besides a number of Auriculas and Viola gracilis semperflorens with numerous large dark violet flowers.

From the greenhouses of the City of Paris (M. Mornay, head gardener) came a lovely group of Begonia Gloire de Lorraine and B. Gloire de Chatelaine, Cineraria La Parisienne, and masses of Indian Azaleas, the whole well displayed against a background of Palms and greenhouse foliage plants. The City Azaleas are now quite celebrated, and are the admiration of all visitors to the Auteuil houses in the flowering season.

MM. Ferard, Paris, had a raised exhibit supported at each side by a brick wall, of rock plants such as Sempervivum, Aubrietia, Wallflower and Arabis; above were vases of cut bulbous flowers. There were also some Cannas in flower, which was rather remarkable considering the time of year.

M. Weiss, of St. Cloud, showed a little group of Japanese Azaleas, Hatsugiri, Hinemayo, etc., in vases, in the Japanese fashion, on large flat stones with a background of moss. The pretty little flowers, with their bright, dainty colouring, were in strong contrast with the Indian Azaleas in the City of Paris exhibit. M. Weiss was also showing Japanese dwarf trees.

MM. Vacherot and Lecoufle, of Boissy St. Leger, had a fine exhibit of cut Carnations, with a background of Nephrolepis.

M. Parent, of Reuil, brought an appetising display of fruits, including Amsden Peach, Sweet Cherries, Strawberries, etc.; M. Angel, of Paris, showed cut bulbous flowers such as Tulips, Anemones, and Irises; and MM. Cayeux and Le Clerc had fine groups of Cinerarias and Viola cornuta.

Lower down, on the banks of the Seine, M. Cochu, the horticultural builder of St. Denis, put up one of his graceful little greenhouses in pitch-pine, which M. Marcoz, of Brunoy, had furnished with a nice display of plants, including vigorous Cymbidiums and the very pretty Phaius Opoixii var. tenebrosa, with a red-brown labellum. Also by the river were the trained fruit trees of M. Nomblo, of Bourg-la-Reine, and the cut trees exhibited by M. Croux, of Chatenay, among which was a fine specimen of Yew shaped like a pagoda.

Altogether this was a pleasing little show, brightly decorative and well arranged: but it is to be feared that the space allotted will prove inadequate for the remainder of the temporary exhibitions, which will be held monthly until the close of the exhibition.

BRITISH FLORISTS' FEDERATION.

The Market Floral Committee of the British Florists' Federation met at Messrs. Monro's flower Salerooms, Tavistock Street, Covent Garden, on Monday, June 8, at noon.

Some Spanish and Dutch Irises, all home-raised seedlings, were presented, but none won the appreciation of the Committee, although two were selected to be seen again.

First-Class Certificate.

Hydrangea Parsifal.—This handsome and brilliant Hydrangea is already becoming popular, although it has not long been in cultivation. It was raised on the Continent, and Mr. Ladds promptly obtained all possible stock of it. The shapely heads of bloom are rich pink or a vivid shade of old rose. Shown by Mr. Philip Ladds, Swanley.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

The monthly meeting of this society was held in the Royal Horticultural Society's Hall on Monday, June 8, Mr. Chas. H. Curtis presiding.

Three members withdrew interest from their deposit accounts amounting to £9 18s. 6d., and two members withdrew £49 17s. 8d. from their deposit accounts, while the sum of £21 7s. 7d. was passed for payment to the nominee of one deceased member. The sick pay for the month on the private side was £67 0s. 4d., and on the State section £55 8s.; maternity claims came to £4. The sum of £45 8s. 6d. was granted to ten members for dental and optical treatment.

A special general meeting was afterwards held, over which Mr. Curtis presided, to receive the report and second valuation of the State section of the Society. The valuation showed a surplus of £8,298, of which the Commissioners are carrying forward £2,950, leaving a disposable balance of £5,348. The following allocations were agreed to for the next five years:—An additional 5s. per week sick pay: 2s. 6d. per week extra during disablement; payment for the first three days of sickness; an extra 10s. for maternity claims; also assistance to pay off arrears in the case of distressed members; £600 per year towards dental treatment; £75 for convalescent members; £75 for surgical treatment; £220 for optical treatment; and £50 towards nursing expenses.

The chairman congratulated the members on the financial position which permitted these increased benefits, and said the position was due to the good health of members and the careful management of the committee.

READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

The first evening meeting of the summer session was held in the charming grounds and gardens of Wittington, Marlow, by the kind permission of the Right Hon. Viscount Devonport, D.L., J.P., on Wednesday, June 3. The party, which included the president (Mr. Frank E. Moring), the chairman (Mr. A. W. Gower), Mr. Councillor T. Waldron, and prominent members of the committee, was welcomed by his Lordship, and, under his guidance and that of Mr. W. J. Short, the capable gardener, about two-and-a-half hours were pleasantly spent in inspecting the herbaceous borders, the water garden, and the unusually large and fine rockeries. Wittington is also noted for its splendid collection of flowering trees and shrubs. The clumps of Rhododendrons in the wild, valley-garden making most charming pictures.

The thousands of plants in the rockeries roused great interest, ranging from the spikes of Eremurus robustus to the miniature Arenarias. Among the most noticeable were large clumps of Aethionema Warley Rose, and A. grandiflorum; Lithospermum Heavenly Blue, very fine, and L. graminiflorum; Helianthemums in variety, Alyssum spinosum, Dianthi, Phlox amoena, P. Laphami, P. G. F. Wilson, P. Sprite, and P. Vivid; and Campanula muralis: whilst in the shady portions of the rock-garden Primula japonica was flowering profusely. This part of the garden was of great educational value, as each species and variety was plainly labelled.

In the water-garden, Iris sibirica proved a fine feature; especially fine was a batch of I. Emperor. The herbaceous borders were looking exceedingly gay considering the season: the large batches of Cheiranthus Allionii looked glorious in the evening sunshine. There was also a fine collection of Irises, containing good specimens of Ambassadeur, Alcazar, Lord of June, Magnifica, King of the Iris, and Isolene; whilst the Lupins were well represented by such varieties as Admiration, Cottage, Penelope, Sunshine, etc.

Obituary.

Ernest Stephen Amey. — East Anglian gardeners will be sorry to learn that Mr. E. S. Amey died on Saturday, May 30, at his cottage in the grounds of The Castle, Castle Hedingham, Essex. The illness which caused his death was of short duration, but he had been failing in health for some time. He was appointed gardener to the late Mrs. Mitchell at Holbrook Hall, Sudbury, Suffolk, about thirty-five years ago, in succession to his father, under whose supervision the beautiful grounds at that place were laid out. He stayed there until 1919, in the service of Mrs. Majendie, and on that lady taking up her residence at her Essex seat, The Castle, Castle Hedingham, he was given charge of the gardens there. The interment took place at Castle Hedingham on the 3rd inst., and the funeral was attended by many local friends as well as several from Sudbury. Mr. Amery was 68 years of age, and leaves a widow and two daughters.

TRADE NOTE.

Messrs. T. Bath and Co., Ltd., of Savoy Street, Strand, and whose works are at Herne Hill, state that the fire which occurred in a section of their works on Friday evening, June 5, will not cause any delay in the execution of orders, as the whole of their sawing and moulding mills were not damaged in any way.

ANSWERS TO CORRESPONDENTS.

Collapse of Spruce and Honeysuckle: *Tracy.* The Colorado Spruce and Honeysuckle shoots indicate that the plants have been badly attacked by aphis which would seriously reduce their vitality. Added to this it is probable that the soil of the garden has become deficient in food content and that the two items together have been responsible for the death of the plants. The death of the Ivy might well be due to the same causes. A very considerable number of Spruces, young and old, have been killed by Spruce aphis during the last few years.

Names of Plants: *Mrs. M. J. W.* Chrysogonum virginianum. *Old Reader.* 1, Embothrium coccineum; 2, Stachys lanata (Lamb's Ear).

Paraffin and Ornamental Water: *C.* Spraying still ponds or other sheets of water would no doubt be effective against mosquitos, as was done in Egypt during the war; but we doubt the policy of doing it where Water Lilies and other aquatics are grown. The oil would be like a film on the top of the water and could scarcely fail to be injurious to the edges of Water Lily leaves and the stems of plants in the water. Oil of any kind is injurious to plants, and although paraffin has been used for cleaning Palms infested with mealy bug, the leaves are washed with clean water soon afterwards. The oil would have to lie on the surface of the water for some considerable time to be effective against mosquito larvae. Running water would carry away the oil. It might be worth while trying the effect of paraffin emulsion, which can be used without injury on many kinds of plants. The emulsion might not lie on the surface of water so effectively as the oil itself, but this might be made the subject of experiment on a small scale to note how it acts in a few days' time. The formula is one gallon of paraffin, four ounces of soft soap, and half a gallon of water. This mixture is churned with a syringe till it becomes like a creamy paint. It is then diluted with ten to fifteen parts of water to one of the emulsion, according to the strength required. Oil is injurious to fishes, especially when they come to the surface to obtain more air.

Communications Received.—G. J. M.—B.—G. H. H.—C. I.—A. M.—Constant Reader—A. P. G.—M. L.—A. G.—A. J. H.—E. H.—F. L.—A. B. C.—S. G.—G. C.

GARDENING APPOINTMENT.

Mr. S. W. Dance, for the past four years Foreman at Cottesbrooke Hall, Northampton, as Gardener to Mrs. R. A. Scott, Williamstrip, Fairford, Gloucester. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.).

CATALOGUES RECEIVED.

Watkins and Simpson, Ltd., 27, Drury Lane, Covent Garden, W.C.2.—Seeds.

Charles Turner, Royal Nurseries, Slough.—Dahlias.

D. Prior and Son, Ltd., Colchester.—Rose novelties, new Dahlias.

Perry's Hardy Plant Farm, Enfield, Middlesex.—New June-flowering Irises.

Thomas Fattorini (Birmingham), Ltd., Trafalgar Works, Hockley Street, Birmingham.—Medals, Cups, and Trophies.

MARKETS.

COVENT GARDEN, Tuesday, June 9th, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—Eds.

Plants in Pots, etc. : Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray, —12's, 15's	5 0– 7 0
Crotons, per doz.	30 0–45 0
Cyrtomium	10 0–25 0
Erica, 48's per doz.	21 0–30 0
—magnifica, 48's per doz.	24 0–30 0
—coccinea, 48's per doz.	21 0–24 0
— —60's per doz.	8 0–10 0
Hydrangea White, 48's per doz.	18 0–30 0
—Pink, 48's per doz.	18 0–24 0
—Blue, 48's per doz.	30 0–48 0
Marguerites, white, 48's per doz.	15 0–18 0
Mignonette, 48's per doz.	15 0–18 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 0
Rhodanthe, 48's per doz.	8 0–10 0
Roses, Polyantha, 48's per doz.	18 0–24 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun.	12 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays	1 6– 2 6
short „	0 9– 1 3
—Sprengeri, per bun.	
long sprays	1 6– 2 0
med. „	1 0– 1 6
short „	0 4– 1 0
Carnations, per doz. blooms	2 6– 4 0
Cornflower, per doz. bun	3 0– 3 6
Croton leaves, var. doz. leaves	0 9– 2 6
Fern, French, per doz. bun.	0 9– 1 0
Galax, American, green and bronze, per doz. bun.	— 1 0
Gardenias, per box, 12's, 18's	4 0– 6 0
Gladiolus, Blushing Bride, per doz. bun.	18 0–24 0
—White, per doz. bun	18 0–24 0
—Peach Blossom, per doz. bun.	18 0–21 0
Gypsophila, white, doz. bun.	9 0–12 0
Iceland Poppies	2 6– 3 0
Lapagerias, per doz. blooms	3 6– 4 0
Lilium longiflorum long, per doz.	3 0– 4 0
Lilium speciosum rubrum, long, per doz. blooms	4 0– 5 0
—short „ „	3 0– 5 0
Lily-of-the-Valley, per doz. bun.	15 0 24 0
Nigella, Blue, per doz. bun.	9 0–12 0
Orchids, per doz.	
—Cattleyas	24 0–36 0
—Cypripediums	5 0– 7 0
Paeonies, White per doz. bun. 6's	15 0–18 0
—Pink, per doz. bun. 6's	12 0–18 0
—Red, per doz. bun. 12's	12 0–18 0
Pyrethrum Double White, per doz. bun.	5 0– 7 0
—Double Pink, per doz. bun.	6 0– 9 0
—Single Red, per doz. bun.	3 0– 4 0
—Single Pink, per doz. bun.	4 0– 5 0
Richardias (Arums) per doz.	5 0– 6 0
Roses, per doz. blooms, Richmond	2 0– 3 0
—Liberty	2 0– 3 0
—Madame Butterfly	2 0– 4 0
—Mme. Abel Chatenay	1 6– 2 6
—Melody	2 0– 3 0
—Molly Sharman Crawford	2 6– 4 0
—Ophelia	2 6– 3 0
—Sunburst	2 0– 3 0
Smilax, per doz. trails	3 0– 3 6
Spanish Iris, per doz. bun.—	
—Blue	12 0–18 0
—Mauve	12 0–18 0
—White	12 0–18 0
—Yellow	18 0–24 0
Statice, mauve	5 0– 6 0
Stephanotis, per 72 pips	3 0– 3 6
Stock, English white	9 0–18 0
Sweet Peas, per doz. bun.	8 0–15 0
Violas, per doz. bun.	1 0– 1 6
French Flowers—	
Anemone, St. Brigid	2 6– 5 0
Marigolds, per doz.	4 0– 5 0

Remarks.—The sunny weather has increased supplies considerably, and prices have been gradually lowering since Friday and Saturday last. The quantities of Carnations are again sufficient for present requirement. Roses are also more plentiful, but many blooms are arriving in a very advanced condition. There is an abundant supply of blue Spanish Irises, but there is still a shortage of yellow and white sorts. Of Gladioli the large-flowered varieties are the most plentiful, and several varieties of these flowers are now on offer. The Bride and Blushing Bride are mostly from the Channel Islands, but these suffer in transit owing to the hot weather. Double white Pyrethrum, white Stocks, and Her Majesty Pinks, are now taking the place of double white Narcissus, which is practically finished, except for a few boxes from Scotland. Delphiniums are the newest addition in this department, and spikes are arriving in limited quantities. The consignments from France now consist of Gypsophila, sweet-scented Paeonies, and mauve Statice. Good supplies of Gypsophila are also arriving in excellent condition from home growers.

Fruit : Average Wholesale Prices.

	s. d. s. d.
Apples—	
—London Pippin	17 0–18 0
New Zealand—	
—Jonathan	18 0–20 0
—Delicious	17 0–20 0
Tasmanian—	
—Cox's Orange Pippin	— —
—Jonathan	16 0–18 6
—Ribston Pippin	16 0–17 6
—Cleo	16 0–18 6
—Others	16 0–17 0
Bananas	16 0–27 6
Cherries, French, per box	1 8– 3 6
per crate	8 0–12 0
Figs (Forced) doz.	3 0–12 0
Gooseberries, per lb.	0 3–0 4½
Grapes—	
—Belgian	2 6– 3 0
—English—	
—Hambro, per lb.	2 6– 4 6
—Muscat	6 0–10 0
—Canon Hall	6 0–12 0
Grape Fruit, Cuban	35 0–40 0
—Jamaica	35 0–40 0
—Florida, finest	35 0–42 6
Lemons, Messina, per box	10 0–16 0
—Murcia	15 0–18 0
Melons (Forced)	3 0– 6 0
Oranges, Jaffa	16 0–18 0
—Spanish—	
—300's	20 0–40 0
—360's	20 0–40 0
—504's	20 0–30 0
Peaches, English per doz.	10 0–24 0
Pears, South African—	
—Keiffer	3 0– 3 6
—Josephine de Malines	5 0– 5 6
—Winter Nelis	3 0– 5 6
—Doyenné du Comice	6 0– 8 0
Pines	3 6– 4 6
Strawberries, per lb.—	
—Best	6 0 10 0
—Seconds	3 0– 4 0

Vegetables : Average Wholesale prices.

	s. d. s. d.
Asparagus—	
—Eversham	3 0– 5 0
—Special	6 0–18 0
—Devon	8 0–10 0
Beans, Guernsey, per lb.	1 6– 2 0
—Worthing	1 6– 2 0
Beets, per cwt.	5 0– 8 0
Cabbage, per tally	7 6–10 0
Canary Island Tomatos	20 0–30 0
Cauliflowers, per doz.	3 0– 6 0
Carrots, new, per doz. bun.	6 0– 8 0
Cucumbers, per doz.	5 0– 6 0
—Flats, 36's, 42's	16 0–20 0
Dutch Onions	11 0–12 0
Greens, best, per bag	5 0– 6 0
Horseradish, per bundle	2 0– 2 6
Leeks, per doz. bundle	2 0– 2 6
Lettuce per doz.	— —
—Cos	2 0– 3 0
—Dutch, per crate	8 0–10 0
Mushrooms, cups	2 0– 2 6
—broilers	1 0– 1 6
Marrows, doz.	10 0–15 0
Onions, Valencia, per case	14 0–16 0
—Egyptian, per bag	11 0 12 0
—English, per cwt.	12 6–14 0
—Spring per doz.	2 6– 3 0
Parsnips, per cwt.	3 0– 4 0
Peas, English per bushel	14 0–20 0
—French, per cane	2 0– 6 0
—Guernsey forced per lb.	1 0– 1 6
Potatos, Canary Island	10 0–12 0
Potatos, per ton—	
—Dunbar	240 0–260 0
—King Edward	200 0–240 0
—Others	90 0–160 0
—New Guernsey, per cwt.	14 0–16 0
—Jersey, per cwt.	14 0–16 0
—Scilly, per cwt.	14 0–16 0
—Spanish, new, per cwt.	— 20 0
Radishes—	
—Round	1 0– 2 0
Rhubarb, per doz.	7 0– 9 0
Spinach, per bushel	3 0– 4 0
Tomatos, English, per lb.—	
—Pink	10 6–11 0
—Pink & White	10 6–11 0
—White	9 0– 9 6
—Blue	9 0– 9 6
—Guernsey	9 6–10 6
Turnips, new, per doz. bun.	8 0–10 0

Remarks.—Nearly all sections of the market report active conditions. The fine weather is entirely favourable to this business which almost depends on sunshine. Apples from Australia, New Zealand, and Tasmania are a firm trade. South African fruits are also in good demand. Apricots from Spain are selling freely, but some parcels are arriving out of condition. English hothouse fruits, such as Melons, Grapes, Figs, Peaches, and Stawberries are moving out satisfactorily. Gooseberries are a fairly steady trade but are inclined to be cheaper. Choice vegetables, such as forced Beans, Marrows, and Peas are a brisk business, although the last will be affected by the increasing quantities of outdoor Peas that are now arriving. Asparagus is selling well, but a bundle here and there comes to hand overheated and in poor condition. Tomatos are an improved business in spite of larger quantities; and Cucumbers, as might be expected during prolonged hot weather, are selling briskly. Mushrooms are plentiful and comparatively cheap. Salads are wanted. Green vegetables are advancing in price. New Potatos have become cheaper, owing to largely increased shipments from Jersey.

GLASGOW.

Business in the fruit market was restricted in the past week in consequence of the acute scarcity of Apples and Oranges. Quite a number of salesmen had none to offer, and the few who were in the fortunate position of having a small quantity on hand obtained 20/- to 21/- per case for Delicious, Jonathan, and Cleopatra. Oranges sold at 30/- for 300's and 28/- for 360's and 504's. Grape Fruit was cheaper at 23/- to 27/-. Scotch Strawberries made 6/- to 7/- per lb, and English 4/-, Cherries 2/3 to 2/9, Black Hamburgh Grapes realised 3/6 to 4/6, Gooseberries 4½d. to 5d., and Peaches 16/- to 24/- per dozen.

There was a good demand for new vegetables, but as supplies were short prices rose, especially for Lettuces, which averaged from 2/6 to 3/6 per dozen for Scotch, and 2/6 to 3/- for English and Dutch. Dutch Carrots realised 5/- per dozen bunches on Tuesday, but jumped to 7/6 and 8/- on Friday. French Carrots averaged 1/2, and Turnips 1/2 to 1/4, Cucumbers 4/- to 8/-, Asparagus 5/- to 6/6 per bunch, Teneriffe Potatos realised 15/- per case, Dutch 11/- per bag, Syboes 5/- per dozen bunches, Radishes 1/6 to 3/-, and Garlic 1/- per lb.

The warmer weather is bringing on the outdoor crops rapidly, but as the demand equalled the increased supplies, prices in the cut flower market kept very steady. Gladioli were cheaper at the following quotations:—The Bride 1/6 for 12's, Maiden's Blush 1/9 to 2/3, Hermione 1/6 to 1/9, Brimstone 2/-, and No. 1 Red 2/- to 2/6. Special Sweet Peas grown at Helmsburgh made 2/6 for 18's, ordinary Scotch-grown 1/3 to 1/6 for 12's, and English 10d. to 1/-. Clara Butt and Farncombe Sanders were the only varieties of Tulips in the market, and they made 1/- to 1/2 for 6's; Double White Narcissi ranged from 6/- to 9/-, and Pheasant Eye 4/- to 6/-. Pyrethrums were a good selling line, Queen Mary, special, returning 6/-; double pink 1/6 to 2/6; red, special, 4/-; and medium 1/- to 2/6. Carnations were firm in value; Mrs. Hemus and Aviator fetched 3/6 to 4/6, Lady Northcliffe 4/6 to 5/-, Peerless 3/6 to 4/-, Enchantress 3/- to 4/6, Mikado 3/-, and Topsy 3/- to 3/6. Madame Abel Chatenay and Madame Butterfly Roses were dearer at 4/6 to 6/-, and Richmond and Mrs. H. Stevens averaged from 2/6 to 4/-. Iris, all colours, sold for 4d. to 1/6 for 6's, and outside-grown Lily-of-the-Valley brought 2/- per dozen bunches.

There were large consignments of pot plants daily. Hydrangeas, large, averaged 3/- to 4/- per pot; small, 1/6 to 2/6, Ivy-leaf Pelargoniums 2/-, Geraniums 6/- to 8/- per dozen; small, 3/-, Marguerites 1/- to 1/3, Spiraeas 1/3 to 1/9, Scented Geraniums 1/-, and Aspidistras 1/- to 1/6.

Supplies of bedding plants continue to increase, and were not so difficult to dispose of at the low prices ruling all the week. Stocks and Asters ranged from 1/- to 1/6 per box, Antirrhinums 1/4 to 2/-, Lobelia 1/6 to 2/-, Violas 9d. to 1/6, Nemesia and Marigolds 1/-, Gladioli 1/6 to 4/-, Begonias 6/-, and Marguerites 3/- per dozen. Coltness Gem Dahlias sold freely at 4/- to 5/- per dozen pots.

THE WEATHER IN MAY.

Although not nearly so wet as May of last year, the rainfall was fully 1¼ inch above normal. There where in all 16 rain days and 8 days of precipitation, leaving only 7 absolutely rainless days. The total amount collected equalled 3.66 inches, and of this the 24th yielded .63 of an inch (the wettest day). Sunshine was under the average for the district, although considerably better than May of last year. In all, 136.7 hours were recorded, being a daily average of 4.4 hours, and a percentage of about 27. The brightest day was the 21st, which contributed 13.9 hours. Four days during the month gave blank cards, viz., 4th, 23rd, 24th, and 25th. The mean maximum temperature was 55.7 degrees, slightly above normal, and the mean minimum 43.0 degrees, also higher. The highest maximum of 64 degrees occurred on the 21st, and the lowest minimum of 35 degrees on the 2nd, an absolute range of 29 degrees. The mean temperature for the month was 50 degrees. On the grass the thermometer registered 32 degrees on the 2nd, but there was no ground frost. At 1 foot deep the soil temperature rose from 45 degrees at the beginning to 54 degrees on the 21st. After the 23rd it fell 1 degree, being 53 degrees at the end of the month. The highest barometric reading was on the 14th, viz., 1,024.6 millibars (30.257 inches), and the lowest point reached was 981.2 mbs. (28.973 inches) on the 28th, the mean pressure for the month being equal to 1,006.2 mbs., i.e., 29.714 inches. Thunder, accompanied by lightning, was noted on the 16th, followed soon after by a dense fog. The last days of the month were characterised by boisterous south-westerly winds, accompanied by rain. *Meteorological Station, Training College Gardens, Mayfield, Dundee.*

SCHEDULES RECEIVED.

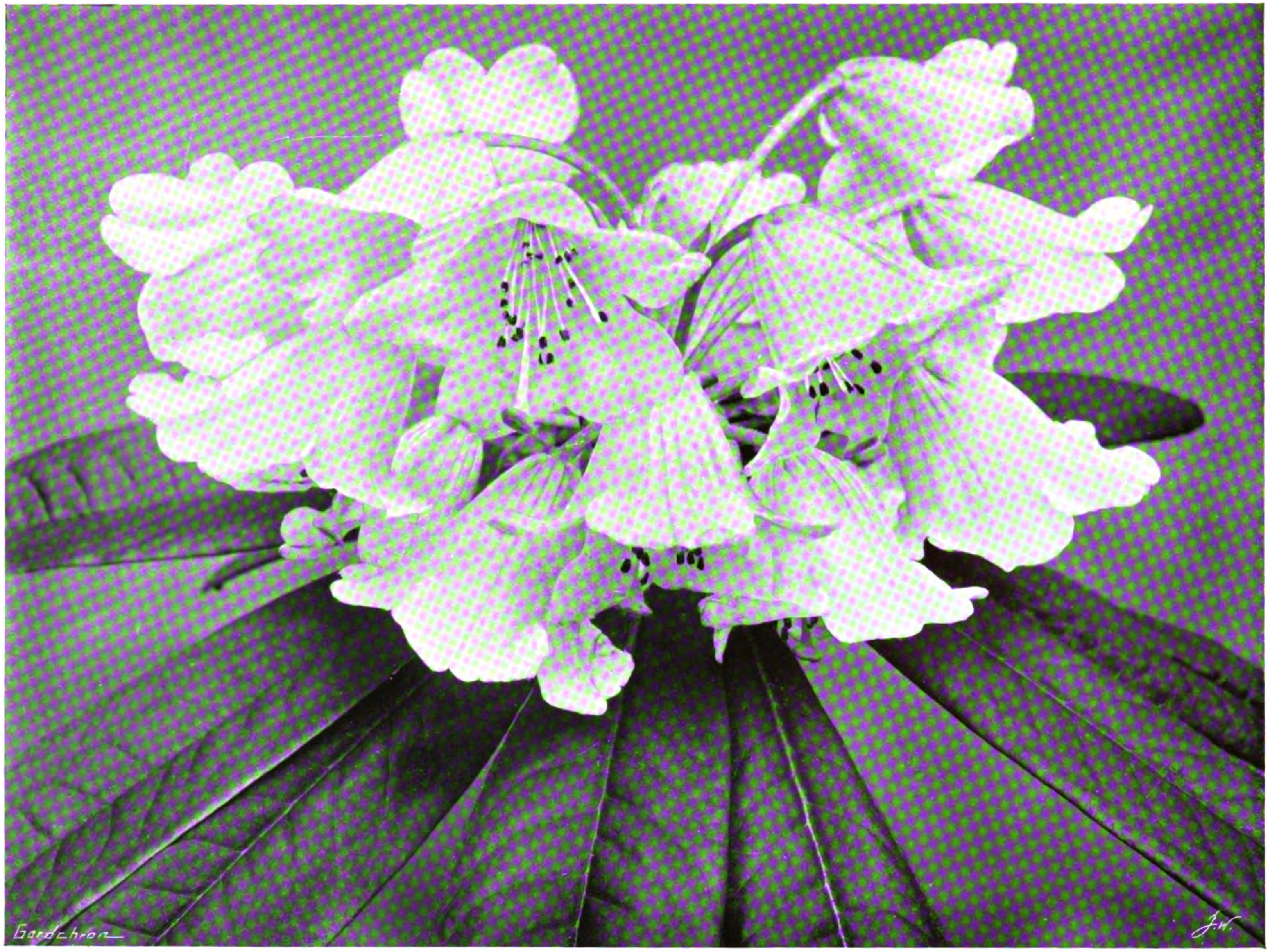
Elstree and District Horticultural Society.—Exhibition to be held in Aldenham Park, Elstree, on July 18.—Secretary, Mr. W. J. Pritchard, Elstree.

Streatham Rose and Sweet Pea Society.—Fifteenth exhibition to be held in Streatham Hall, on Tuesday, July 7.—Secretary, Mr. W. B. Strong, 6, Killieser Avenue, S.W.2.

Croydon Chrysanthemum Society.—Thirty-third exhibition to be held on Wednesday and Thursday, October 28 and 29.—Secretary, Mr. T. Aley, The Firs, Highbarrow Road, Addiscombe.

National Chrysanthemum Society.—Exhibition to be held at the Royal Horticultural Hall, Westminster, on November 5 and 6, 1925.—Secretary, Mr. C. H. Curtis, 5, Tavistock Street, Covent Garden, W.C, 2.

Supplement to The GARDENERS' CHRONICLE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J.W.

Photo C. P. Raffill

RHODODENDRON CALOPHYTUM.

THE
Gardeners' Chronicle
No. 2008.—SATURDAY, JUNE 20, 1925.

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SUPPLEMENTARY PLATE.
Rhododendron calophytum.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 61·2°.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, June 17, 10 a.m. Bar. 30·2, temp. 60°. Weather, Dull.

The Prospects of the Fruit Crops.

ANYONE who is at one and the same time a grower of fruit and a student of plant physiology must have passed through a trying time this year. All the omens uttered with no Delphic uncertainty were unpropitious for top fruit. A wet summer followed by a wet autumn and winter boded no good for the Plum, Pear, and Apple crops, and therefore, as a grower, the dual personality we have evoked was full of apprehension. Yet when spring came the Plums and, in particular, the Damsons, displayed a wealth of blossom which delighted the eye of Jekyl, the grower, but puzzled the mind of Hyde, the physiologist. Pear blossom following closely and profusely on the Plum accentuated these divided feelings, and Apple blossom, when it came—and it was very late relatively to that of Pears—made Hyde doubt whether his forebodings based on physiological knowledge were going to prove just. All looked full of promise in the orchard, and there were even those who, impressed with the snowy whiteness of the blossoming fruit trees, were not unprepared to think lightly of the experience of generations of fruit growers and of the physiological knowledge of plant life, and to anticipate a good fruit year. It may be that for some of them these anticipations will be fulfilled, but we fear—speaking as grower Jekyl—that their hopes are already shown to be illusory, and that Hyde, the physiologist, will have the sinister laugh of them when in surveying "blossom and blossom and promise of blossom, but never a fruit." At all events, in the orchard which provoked these observations the promise of a good fruit year is already blighted—like the trees themselves—so far as Damsons, Plums and Pears are concerned. The swelling fruits of any of these kinds are few and far between, and moreover, so far as the Damsons are concerned, the profusion of blossom seems to have resulted in a serious check to growth, so much so that the young leaves fell early to aphis attack—and that in spite of spraying, and only now are there signs of recovery. With Pears it was otherwise. They cast their young fruits—cutting their losses as it were—and set about developing a luxuriant foliage. Apples, however, found better conditions at the time of fruit setting, and on their present showing do not justify the prognostications of the pessimistic physiologist, albeit that, as we verily believe, he would rather have his fruit room unfilled than his theory falsified. It is, of course, possible to attribute these failures of early promise to the succession of cold nights and gloomy days which occurred during blossom time. And, doubtless, the poor results are in part due to this cause. But the physiologist will have it that the major cause lay in the unpropitious summer of last year. Old and experienced growers are wont to talk of strong blossom, though what exactly they mean by the term is hard to discover, except that strong blossom is followed by a good fruit crop and weak blossom is not. There is, apparently, to their eye a difference in quality as distinct from quantity of blossom. We, for our part, think they are right. If so, the recent plausible explanations of the causes which lead to the differentiation of fruits and vegetative buds from indifferent buds—which are potentially either—must be accepted with some measure of reserve. Not that these conclusions, based on careful investigation, are to be regarded as unsound but rather that, as happens so frequently with respect to the life of plants, the discoveries of physiological science cover not the whole but only part of the ground. This indeed is inevitable, for the life of plants is obscure and complex. How obscure and complicated it is is known only to those who work constantly among them. In any case, present indications, pointing as they do away from a bumper fruit year, leave the grower, Jekyl, sorrowing, and Hyde, the physiologist, preening himself because even his very limited knowledge enabled him to predict what has taken place. It will be of more than usual interest, therefore, to learn later on whether the showing of the one orchard to which reference has been made is a fair indication of the fruit prospects as a whole, and it should be well worth while when the reports are being made those who make them should state the aspect and indicate the kind of soil to which their reports refer. For a well-sheltered, well-cultivated orchard may possibly yield this year results very different indeed from those in somewhat exposed orchards which, owing to weather, had perforce been left too long uncultivated.

The Way to Grow Wistarias.—Wistarias, which do not climb naturally, are usually supported on trellises or grown on rods or frames attached to buildings. This means that they have to be more or less pruned every year and in this way lose much of their flowering wood and often have a stiff and unnatural appearance. How to grow them naturally is demonstrated by a plant of the white Japanese Wistaria growing close to the Centre Street gate of the Arnold Arboretum. This was planted many years ago in what was then a nursery and has been allowed to grow naturally over some tall bushes close to the drive into the Arboretum; it now extends over a large area and this year, as in many past seasons, the whole plant was loaded down in May with its long racemes of flowers. According to the *Bulletin* of the Arnold Arboretum this specimen is one of the most beautiful and interesting objects in the Arboretum, and well worth the attention of all persons who like to see plants growing naturally and as they grow in their native countries as wild plants.

Leaflets on Fruit Preserving.—The University of Bristol has published several leaflets dealing with the preservation of fruits and also of Asparagus. The fruits dealt with are Gooseberries, Raspberries and Loganberries, Currants, Cherries, and Blackberries. Asparagus is preserved in containers filled with salt solution made by dissolving two to four ounces of common salt in one gallon of water. The Asparagus is blanched by placing it in boiling water for two or three minutes with the heads above the surface of the water and then put in cold running water for about five to ten minutes. The cans are filled to within a quarter-inch of the top with boiling brine, sealed and then sterilised. The method of preserving Asparagus in bottles is also dealt with. The leaflets on fruit preserving contain a lot of useful information and may be obtained from the University of Bristol Fruit and Vegetable Preservation Research Station, Campden, Gloucester, price 1½d. each post free.

Royal Horticultural Society Gardens Club.—The annual meeting of the R.H.S. Gardens Club will take place at Aldenham House Gardens, Elstree, Hertfordshire, by kind permission of the Hon. Vicary Gibbs, on Saturday, July 11, 1925. Members intending to be present are asked to inform the Secretary without delay. Full particulars of the arrangements, times of trains, etc., will be sent later to those making application. A char-a-banc will convey members from Wisley at a return fare of six shillings.

Importation of Narcissus Bulbs into America.—Much perturbation is being felt among Dutch Bulb growers at the approach of the date—1st January, 1926—after which the importation of Narcissus bulbs into America will, to all intents and purposes, be stopped The American Federal Horticultural Board has issued a circular on the subject, reiterating the wording of the decree of October, 1922, in question, now about to come into force, and laying stress on the seriousness of the diseases which have formerly been introduced into America with Narcissus bulbs, and which have affected not merely that genus, but also Onions, Clover, Lucerne, Potatos, and other crops, A loop-hole is left by which new varieties. etc., may still be introduced, under very stringent conditions, one of which is that the bulbs shall have been subjected to the hot water treatment for eel-worm.

Special "Cactus Number" of "Floralia."—Our Dutch contemporary, "Floralia," published on May 22 a special number chiefly devoted to Cacti, a family of plants much more cultivated on the Continent than in this country. The articles are accompanied by excellent illustrations, including a clear line drawing of Sempervivum globiferum and photographs of, *inter alia*, S. glaucum and S. tectorum, several Mesembryanthemum species, and Schlumbergera (syn. Epiphyllum) Gaertneri; while about a column is devoted to a description and illustration of the "Negro's Hand," or Opuntia clavarioides var. cristata. Cacti suffer from various pests, in common with other plants, and to these a short article is devoted which will doubtless be useful to cultivators of these interesting subjects.

Honour for M. van Orshoven.—M. Hector van Orshoven, the Director of the Belgian "Office Horticole" (or Board of Horticulture) has recently received from the French Government the Cross of Chevalier du Mérite Agricole de France. This honour, paid to one who occupies the highest position in official Belgian horticultural circles, is well merited, and we tender to the recipient our heartiest congratulations. Mr. van Orshoven was closely associated with the *Gardeners' Chronicle* during the war years.

Award of the Albert Medal of the Royal Society of Arts.—The Albert Medal of the Royal Society of Arts for the current year has been awarded by the Council, with the approval of the President, H.R.H. the Duke of Connaught, to Lieut.-Colonel Sir David Prain, C.M.G., C.I.E., M.B., LL.D., F.R.S., "for the application of Botany to the development of the raw materials of the Empire." The Albert Medal was instituted in 1863 as a memorial of the Prince Consort, who was for eighteen years President of the Society, and is awarded annually "for distinguished merit in promoting Arts, Manufactures and Commerce."

R.H.S. Scholarships for Sons of Gardeners.—The Council of the Royal Horticultural Society has decided to offer four scholarships in their School of Horticulture at Wisley (each of the duration of two years) to young men between the ages of eighteen and twenty-two who have served for at least three years in private gardens or nurseries. Two of these will be offered to commence in October 1925, and applicants should send to the Director, R.H.S. Gardens, Wisley, Ripley, Surrey (from whom full particulars may be obtained), a full account in their own writing of their schooling and of the work they have been engaged upon. Tuition will be free. The amount of subsistence allowance to be paid will be determined by the circumstances of each case, the maximum being at the rate of 30/- a week. Candidates must be prepared to work in the garden as directed, and at all such times as are required. If called upon for Sunday duty, extra pay will be given at the rate in force for the time being. The selection of candidates is at the sole discretion of the Council, and a scholarship may be determined at any time by the Council if it is found that for any reason the holder is not likely, in the opinion of the Director, to benefit by its continuance, and in any case it will not be continued beyond two years. The first election will take place at the end of August, and intending candidates must send in their applications before August 20. The second election will take place in August 1926.

Agricultural Wages Board.—The Offices of the Agricultural Wages Board and of the Labour branch of the Ministry of Agriculture were transferred from Gwydyr House Annexe, Whitehall, to No. 7, Whitehall Place, London, S.W.1., on Tuesday, June 16, and it is requested that all communications may be sent to the latter address.

Presentation to Dr. G. Claridge Druce.—On Friday, June 26, at 2.45 p.m., Viscount Grey of Fallodon, K.G., will make a presentation to Dr. G. Claridge Druce on behalf of the Botanical Society and Exchange Club of the British Isles, at Dorchester House, Park Lane, London, which has kindly been lent by Sir George and Lady Holford.

Mr. William McKelvie.—We have pleasure in publishing the portrait of Mr. William McKelvie, a well-known gardener in East Lothian, who recently retired and is in residence at Haddington. Mr. McKelvie is a native of Argyllshire, where he was born in 1846. At the time of his birth his father was manager to the Campbells of the Island of Jura. Sixty-five years ago he began his apprenticeship as a gardener at Broxmouth Park, Dunbar, East Lothian, with Mr. Denham, who at the time was gardener and manager to the Duke and Duchess of Roxburghe. After serving his apprenticeship he worked as a journeyman at Moredun, Midlothian; Raehills, Dumfriesshire and Ralston, Renfrewshire. In 1867 he went to Floors Castle, where he was put in charge of the plant and flower decoration, and of the Castle conservatory. Queen Victoria visited the Duke and Duchess of Roxburghe in that year, staying a week, and during the time Her Majesty drove through most of the Border towns and villages. Being greatly interested in flowers Her Majesty visited the beautiful Castle gardens and planted a Sequoia gigantea in the lawn. The following year Mr. Rose, under whom Mr. McKelvie had been serving, was appointed to Windsor and Frogmore Gardens. A Mr. Knight came as gardener, and Mr. McKelvie was appointed inside foreman, having under his charge all the glass. The glasshouses were very extensive, and there was very early forcing of Grapes, Strawberries, etc. There were altogether about 5,000 pots of Pineapples. On the retirement of Mr. Denham, Mr. McKelvie was appointed gardener at Broxmouth in 1874, and the fact that he had had a wide experience of his trade made it an easy matter for him to look after the woods and game coverts, in which the Duke took a great interest. The Duke of Roxburghe died in April, 1879, and three years later Queen Victoria paid a three days' visit to Broxmouth. Her Majesty drove through Dunbar escorted by the East Lothian Yeomanry, and before leaving planted a Cedrus Deodora on the lawn. Mr. Denham had always been a successful exhibitor of Grapes at the Royal Caledonian Society's Autumn Shows, and especially of Muscats. This reputation Mr. McKelvie successfully maintained, and altogether he has gained between 200 and 300 prizes at shows. Mr. J. S. Brunton, of Burnley, was Mr. McKelvie's first apprentice at Broxmouth. When the Dowager Duchess of Roxburghe died in May, 1895, the staff at Broxmouth was greatly reduced, and Mr. McKelvie took to farming near Yester, remaining there for twenty years. He has now retired and is living with some of his family at Parkside, Haddington, East Lothian.

MR. WM. McKELVIE.

British Mycological Society's Excursion to Cambridge.—Members of the B.M.S., who are visiting Cambridge on July 4 should leave Liverpool Street at 8.30 a.m. (breakfast car on train), arriving at Cambridge at 9.58 a.m. Visits will be paid to the University Farm. The Botany School, the Molteno Institute of Parasitology, and, if time allows, a fruit plantation near Cambridge. Lunch will be held in the Hall of Emanuel College, and tea in the Botany School. It is expected that work in progress in the following pathological problems will be demonstrated:—The inheritance of Disease Resistance (Prof. Sir R. H. Biffen, F.R.S., and Mr. F. L. Engledow); Silver-leaf Disease (Mr. F. T. Brooks and Mr. W. C. Moore); Helminthosporium Disease of Cereals (Mr. N. J. G. Smith); the Control of Bunt in Wheat (Mr. Dillon Weston); Apple Mildew (Mr. R. C. Woodward); Fungal Invasion in Apples in Relation to Senescence (Mrs. M. N. Kidd); Clover Rot (Mr. S. M. Wadham); Perennial Rust Mycelia (Mr. Alex. Smith); and Fungi Pathogenic to Man (Prof Nuttall, F.R.S., Dr. Hare and Mr. Tait). Those who intend to go on this excursion are requested to send their names to Mr. F. T. Brookes, 31 Tenison Avenue, Cambridge, by June 26 at the latest.

New Parasite of the Woolly Aphis.—A new parasite, Aphelinus mali, is now being introduced in this country to help in dealing with the aphis pest. It is a minute insect—a relation of the better-known Ichneumon flies—which lays its eggs in the body of the woolly aphis. Each egg develops into a larva which feeds inside the woolly aphis and kills it. A small stock of the parasite was obtained in 1923 and was induced to multiply in captivity. In 1924, enough parasites were available to render possible small introductions into each of the more important fruit-growing districts. Unfortunately, the weather of 1924 was very unfavourable to the parasite, which was still further handicapped by the fact that the aphis, its natural prey, was abnormally scarce. In spite of these difficulties, the parasite appears to have established small colonies in at least two districts, and possibly in others: the captive stock has continued to flourish and has permitted of further small introductions during the past spring. The outlook is, therefore, not unhopeful. The Ministry of Agriculture, however, point out that though the parasite may prove a valuable ally to the fruit grower, it must not be regarded as capable alone of destroying the enemy, and that the stock of parasites is not at present large enough to permit of their public distribution. The Ministry would, therefore, be grateful if correspondents would not ask for a supply of parasites, as such requests must, perforce, be met with a regretful refusal.

Peterborough Horticultural Exhibition.—A horticultural section will be provided in connection with the exhibition of the Peterborough Agricultural Society to be held on July 14, 15, and 16. Valuable cash prizes, in addition to gold and silver medals, will be offered, and every facility will be given to exhibitors of trade displays. The horticultural section will be open only on the second and third days of the show. The Secretary is Mr. Robert Bibby, Agricultural Office, Peterborough.

New Director of the Scottish Plant-Breeding Station.—At a meeting of the Scottish Society for Research in Plant-Breeding held at Edinburgh on Monday the 8th inst., Mr.

William Robb, N.D.A., was appointed Director in place of Mr. James M. F. Drummond who was recently appointed Regius Professor of Botany at Glasgow University. Mr. Robb, who has been acting as Assistant Director for a number of years has a long and intimate knowledge of plant breeding. Prior to his association with the Scottish Plant-Breeding Station, he assisted the late Professor John A. Wilson, Director of the Plant-Breeding Station at St. Andrews, who achieved remarkable success in the propagation of new varieties of Potatos.

Appointments for the Ensuing Week.—Tuesday, June 23: Royal Horticultural Society's Committees meet (2 days); Southampton Royal Horticultural Society's show (3 days); Newcastle and District Horticultural Mutual Improvement Society's lecture. Wednesday, June 24: Lincolnshire Agricultural Society's show (3 days); Cheltenham Spa Floral Fête (2 days); Croydon Horticultural Society's show; Mitcham, Tooting and District Horticultural Society's meeting. Thursday, June 25: Royal Botanic Society's meeting. Friday, June 26: Association of Economic Biologists' meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Orchids for the Million.* The prices paid for the Orchidaceous plants at Mr. Bateman's sale, will, I fear, in some degree deter the humbler aspirant, but it must be recollected that these were many of them very rare, and many were fine specimens: and whether it was the *prestige* of Mr. Bateman's name or the desire to benefit the charitable object of the sale, the plants sold, in most instances, at double the price they might have been bought for of the nurserymen. The slow growing plants, such as the Aerides, Vandas, Saccolabiums, etc., will always be dear. They are rare in their own country, and make but a few leaves a year; but the demand will, even as to these, soon increase the supply. Already we have had importations of Barkerias, and at the sales at Mr. Stevens' this year they might be bought in lots of eight or ten plants for less than a small scrap might three months before have been purchased. The Phalaenopsis amabilis, so rare, is already becoming comparatively common—the demand created the supply—and twenty-five plants (new importations) were sold at Stevens' last week, and I have no doubt but that many more will soon arrive. It was only last week I received a basket of Orchidaceous plants from Rio, and found inside a bill printed in Portuguese and English, stating that the sender sold Epiphytes, tuberous roots, walking-sticks, bulbs, shrubs, etc., from Minas, Petropolis, New Fribergh, the Organ Mountains, Tijuco, Gaven, and several other parts of Brazil. I do not, therefore, mean to allow the high prices of Mr. Bateman's sale to deter me from urging the growing these plants in small, cheap houses. Those who have any doubt on the question of their houses have only to pay a visit to Mr. Rivers, Sawbridgeworth. There is a good-sized house, made of boards, glazed, and heated for about £30; and his son has begun a collection of Orchids, and I own I never saw any plants better grown; and I should state that the house was not devoted to the Orchids alone, for up the rafters were trained Cucumbers; and I believe this year's crop has gone near to pay the whole cost of the house. Nothing can be more successful and interesting than Mr. Rivers' experiments in building cheap, glazed sheds; he has several in which he has planted the more delicate Pears (dwarf), Figs, standard Peaches, vines trained to upright stakes, Strawberries, etc., and all bearing good crops. I think it is only necessary to see the great success of Mr. Rivers in the management of these houses and the economy of their construction, to ensure his example being largely followed. *Dodman, Gard. Chron., June 22, 1850.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA TRIANAE × C. MOSSIAE.

Messrs. Stuart Low and Co., Bush Hill Park, Enfield, and Jarvisbrook, Sussex, send information respecting a small batch of Cattleyas which they have raised between the above-mentioned species, the strongest plants of which they hope to flower next year, when a name for the cross will be communicated and flowers sent.

The species used are the oldest, most numerously represented in gardens, and most variable in the quality and colour of the flowers and yet, so far as we can determine, no cross between the two has been recorded. The main reason for this is that the two bloom at different times. The many records of awards of the Royal Horticultural Society show that the season of C. Trianae is February and March and that of C. Mossiae, May and June, so that although there are occasional flowerings at other seasons both are seldom in flower together. Messrs. Low have overcome this difficulty by storing pollen of fine varieties in tubes and thus they have been enabled to obtain crosses with several fine species and hybrids not previously secured before.

Both the species in this case are of the C. labiata section, all the large-flowered class being referred to C. labiata by some botanists. If the hybridists had followed on hard and fast lines an inextricable muddle would have resulted. In crossing species flowering at different times, variety is introduced and also a new season of flowering.

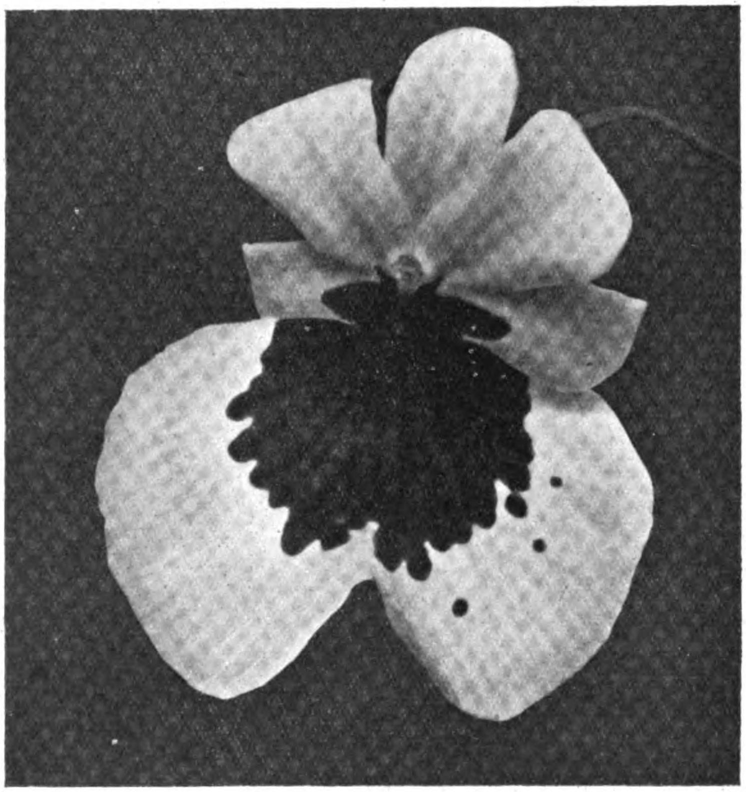

FIG. 189.—MILTONIA VEXILLARIA VAR. RAJAH.

Flowers rosy mauve with large, dark crimson mask. R.H.S. Award of Merit, June 9. Exhibited by Messrs. Flory and Black (see p. 420).

ODONTOGLOSSUM HYBRIDS.

Messrs. Charlesworth and Co., Ltd., Haywards Heath, send flowers of some of their hybrids, showing the great improvement which time and good cultivation brings to the original forms.

Odontoglossum Omega (Aglaon × St. James) is represented by the three-flowered upper portion of a fine spike. The flowers are nearly four-inches across, the ground colour pure white, the sepals and greater part of the petals blotched with Tyrian purple. The lip is white with red-purple blotches.

Odontoglossum Alvara (Ithone × Clovis) has flowers of intense, claret-crimson colour, with white margin to the serrated petals and lip.

Odontoglossum Clonius (Aquitania × The Czar) might be called a picture flower, the heavy, ruby-purple, blotching being intersected by wavy bonds of pure white.

Odontoglossum Isolene (Tityus × Georgius Rex), over four-inches across the petals, is of firm substance, white, beautifully blotched with claret-purple, the very broad lip being pure white, with one large and some smaller purple blotches around the crest.

Odontonia Cybele II. (Odontonia Dora × Odm. Georgius Rex) shows the expansion of the lip through Miltonia very conspicuously. The inner parts of the flower are blotched with ruby-red on a white ground, the outer clear lilac-mauve. The original Odontonia Cybele was raised from Miltonia candida × Odm cirrhosum as recorded in *Gard. Chron.*, March 8, 1913, the plant being exhibited by Messrs. Charlesworth and Co., at the R.H.S. meeting on March 4, 1913. It is a very remarkable cross.

Odontonia Etna (M. Charlesworthii × Odm. Ithone), with a very large labellum, is densely spotted with rosy-mauve, the inner halves being blotched with purple. Odontioda Irina (Odm. Louise × Oda. Madeline) is of wonderfully rich colour, being of uniform claret-purple tint, except the front lobe of the lip, which is blush-white, shading to purple in the centre. The perfect condition of these flowers after transit by post in very hot weather is one reason for the popularity of Orchids as cut flowers. *J. O'B.*

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Lycaste.—Many plants of Lycaste Skinneri and others of this genus have finished blooming and are making new growths, therefore an increased amount of moisture at the roots is necessary. These plants do not need re-potting annually, provided they are growing in a substantial compost. But if the soil is allowed to become stagnant it soon causes the new roots to decay and the young growths to turn sickly. The plants should be examined as to the need for re-potting. The receptacles used should not be over-large, and be well drained. The rooting-medium may include at least one-half its bulk of good, fibrous loam, with the small particles shaken out, and the remainder should consist of Osmunda fibre, half-decayed Oak leaves and Sphagnum moss, the whole cut up into short portions, with sufficient crushed crocks mixed with it to ensure a free passage of water. In re-potting them the young shoots should rest on the surface of the soil, level with the rim of the pot, for if placed too low in the compost they are apt to decay and set up disease in the pseudo-bulbs. The many varieties of L. Skinneri are very useful and beautiful Orchids, the flowers ranging in colour from pure white to shades of deep rose. Other very decorative kinds are found in such as L. lanipes, L. costata, L. cruenta, and L. aromatica, all of which require similar cultural treatment. After re-potting them the plants should be watered with great care until the young growths are some inches high, and the new roots have grown well into the compost. They will grow well in a light position in an Odontoglossum house. The plants are sometimes subject to attacks of red spider, and periodical sponging of the leaves is advisable.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Flowering Shrubs.—As these pass out of flower, any necessary pruning should be done. Deutzias, Philadelphus and shrubs of similar habit should have most of the old flowering wood reduced to a strong growth, keeping an eye always on retaining a shapely, well-balanced specimen. Guelder Roses and Lilacs frequently make more wood than is wanted, and the plants may be helped considerably by removing the weaker shoots, thus giving the remainder more room to develop. Some of the Cytisuses have a tendency to make long, straggling growths, and to keep them in bounds a little pruning immediately after flowering is necessary. When cut back to the old, hard wood, however, they frequently fail to break into growth, hence annual pruning should be practised to prevent long, naked stems. Azaleas and Rhododendrons should have the seed pods removed wherever possible, and this is of the utmost importance in the case of young plants.

Border Pinks.—These charming, old-fashioned garden plants, now available in such a wide range of varieties, are very beautiful in early summer and make delightful subjects for small beds in a sunk garden or for edgings alongside walks. Pipings, that is the upper part of the growths drawn from their sheath, taken now or during the next week or two will root freely in sandy soil in a frame or hand-light, but they should not be kept too close as they are liable to damp off. Cuttings struck at this season make strong plants for putting in their flowering quarters in September, which ensures them becoming well established before winter sets in.

Flower Beds.—Newly planted beds will need constant attention. All failures should be made good immediately and the staking and tying of everything needing support attended to. Remove all fading flowers and dead leaves, stir the soil frequently between the plants until they meet, and peg down those subjects which need it.

Climbers.—Climbing plants on walls and trellises should be examined at frequent intervals for tying and nailing in the shoots. Growths which are laid in for the extension of the plant should be allowed ample space for development. The long, cord-like growth of the Wistaria should be trained-in as it develops and thus allow a rapid extension where space permits. Growths which are not wanted for extension may be pinched at the third or fourth leaf.

Evergreen Hedges.—The clipping of hedges should receive attention before the young growths have developed too much. Newly-planted hedges should not be allowed to make tall growth until the base is well furnished.

PLANTS UNDER GLASS

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Hippeastrums (Amaryllis).—So soon as the seeds of Hippeastrums are ripe they should be sown in well-drained pans, filled with a light, sandy, open mixture. Distribute the seeds thinly and evenly over the surface of the soil in the pans, which should have been previously well watered. Cover the seeds with clean, sharp sand. Place the seed-pans in a house having an intermediate temperature, and cover each pan with a sheet of glass and a sheet of paper until the seeds germinate. Do not fill the pans too full, but allow half-an-inch or so of space between the surface of the soil and the glass covering. The one-year-old seedling Amaryllis should now be ready for transference to larger receptacles; those of five-inches or five-and-a-half-inches diameter will be the most suitable. The plants should be transferred to the larger pots with as little disturbance of their roots as possible. After potting the seedlings, plunge the pots in a bed in a light house of the same temperature in which the plants have been growing hitherto, closing the house after syringing in the afternoons, early or later according to the prevailing weather, to keep them growing briskly. The older plants, which have passed out of flower, should now be making growth freely. During warm weather they will require an abundant supply of water, and will be greatly assisted if given frequent applications of diluted liquid manure.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Early Peach and Nectarine House.—When the last fruits are picked from the earliest trees, the latter should be pruned immediately, in order that the fruiting wood for next season's crop may be thoroughly ripened. Cut out all superfluous growths, leaving the trees nicely furnished with young wood. The trees should then be tied in and kept well syringed twice a day to keep all pests in check. Where red spider is present on the foliage give the leaves a good dusting with flowers of sulphur, or use Campbell's sulphur vaporiser. The sulphur fumes will reach every part of the trees. After the crop is gathered it will generally be found that the borders will require a thorough soaking; in the case of young, strong-growing trees no manure will be necessary, and clear water only should be used, but older trees that have carried heavy crops are much improved and strengthened by soaking the soil on frequent occasions with weak manure water and giving the roots an occasional application of a concentrated fertiliser. Where the houses have been ventilated freely during the time when the fruits are ripening, open the top and bottom ventilators to the fullest extent both day and night. Continue to keep everything thoroughly clean and healthy. This will benefit the trees and crops for the following year.

Successional Houses.—Expose the fruits to the full light and sun as recommended for the earlier houses, using either small laths or eight-inch unpainted wooden labels to bring such as are shaded up to the light. Continue to feed and encourage the trees to grow by every means, keeping them syringed twice daily and regulating the ventilation according to the date when ripe fruits are required. Peach cases containing late varieties should be given full air night and day. Plenty of water will now be required at the roots, and food according to the size and strength of the individual trees. Afford a little shade to Cardinal Nectarine when the fruits are ripening, and apply a little less water at the roots, taking care that the tree does not suffer from the drought.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Peaches and Nectarines.—These trees on walls require attention in disbudding the shoots as they advance in growth. All growths that are not required for furnishing the trees should be removed to make room for training-in the young shoots for next year's crop. All lateral growths should be cut away, leaving in their case one bud at the base, and all very coarse growth completely. All small fruits and badly placed specimens should be rubbed off. The trees, whether grown on open walls or under copings, should be syringed copiously after hot days; where they are trained on east walls the syringing may be done before the usual time of the staff leaving work, but if on a west wall the work should be deferred until the evening. Syringing should not be neglected or bad results may follow through attacks of red spider and aphis of different kinds. Keep a sharp watch on the borders to see that they do not become dry. Peach and Nectarine trees need much moisture at this stage; if the soil is on the dry side give copious supplies of water, and liquid manure if it is available, otherwise sprinkle fertiliser over the border and well water it into the ground. Give the roots a mulching of farmyard manure if the soil is light in texture. All other fruit trees that are growing under copings should receive this treatment. The hoe should be used constantly on the borders to destroy seedling weeds and promote a fine tilth.

Gooseberries.—Where the crop of Gooseberries is a heavy one, thin the fruits forthwith; if the berries are required for exhibition remove all the small ones and give the roots plenty of water. The small fruits will be useful for bottling. If the crop is only required for kitchen use relieve the trees of the surplus berries so soon as it is convenient to do so, and utilise the thinnings for preserving. If the berries are needed for dessert they should be thinned and treated as advised in the case of those intended for exhibiting. If the bushes have not been mulched with manure, a mulch of this material should be applied and well watered. Watch for the presence of green fly, sawfly, and American mildew; if the last puts in an appearance first remove the tips of the young growths and burn them, and then pick the fruits and spray the plants heavily with Bordeaux mixture.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Asparagus.—The cutting of Asparagus should cease about the middle of this month, owing to the first cutting being made so late this season in most districts; no harm will have been done if heads have been cut up to this date. Every assistance should be given the roots to make strong top growth, and a sprinkling of salt on the beds now will prove beneficial as will also soakings of liquid manure. Where the beds are situated in an exposed position, the strongest growths are often blown about by high winds, and it is therefore advisable to stake these before any damage has been done.

Cucumbers.—The plants in houses and pits are making rapid growth, and tying and stopping of the shoots must be given constant attention. Top-dress the roots with good loam on frequent occasions and never allow the plants or the atmosphere to become dry or attacks of red spider will result. Soaking the roots with liquid manure at intervals will greatly assist the crop, varying the stimulant at intervals with a dressing of artificial manure, and washing it in the soil by copious waterings. Cut all fruits from the plants so soon as they are matured. Another sowing of Cucumber seeds may be made and the seedlings brought along ready for putting in frames that will soon be cleared of early vegetables.

Cabbage.—If the ground from which Spring Cabbages have been cut is not required for any other crop, it well repays to leave the Cabbage stumps on the bed. Useful heads may be cut later from beds that have been cut early, although the heads will not be large. Even from later beds from which supplies are now being cut, plenty of good greens will develop for use during autumn and winter. As ground becomes vacant continue to plant out late Cabbage plants.

French Beans.—Continue to make sowings of French Beans to keep up supplies of young pods. If the ground has become hard and dry give the trenches a thorough soaking before sowing the seeds.

Runner Beans.—Another sowing of Runner Beans should be made. This sowing will extend the supplies of young and tender pods in the late autumn and will carry on the crop until the first frosts occur.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Watering.—Should dry weather continue, immediately after setting out bedding plants watering will be very necessary. The ground should be thoroughly saturated, using due care to prevent flooding. The following morning a hoe should be worked amongst the plants, as this will prevent the ground from cracking, and the fine soil on the surface will help to retain moisture in the ground for a long period. Pot-grown plants, if well soaked before they are planted, should only require watering if the drought be severe and prolonged.

Herbaceous Calceolarias.—The present is a suitable time to sow seeds of these flowers. A well-drained seed-pan should be filled with equal parts of loam and leaf-mould, to which has been added some river sand. Thoroughly water the soil before sowing the seeds. The pan may then be placed in a cold frame and the latter kept close and shaded until germination has taken place, after which admit air freely. The seedlings should be pricked out when large enough to handle. Continue to grow them in cool conditions and provide shade in bright weather.

Strawberries.—When the runners are large enough they should be layered to obtain plants for forcing next year. Fill three-inch pots with rich loam and make the soil fairly firm. Drainage is not necessary. Plunge the pots between the rows and secure the selected runner to the soil in the pot by means of a peg. In two or three weeks time the runner will have rooted sufficiently in the pot to be severed from the parent plant. The young plants may then be grouped together in the frameyard ready for potting on later. The best results in forcing Strawberries are obtained from layers secured early in the season.

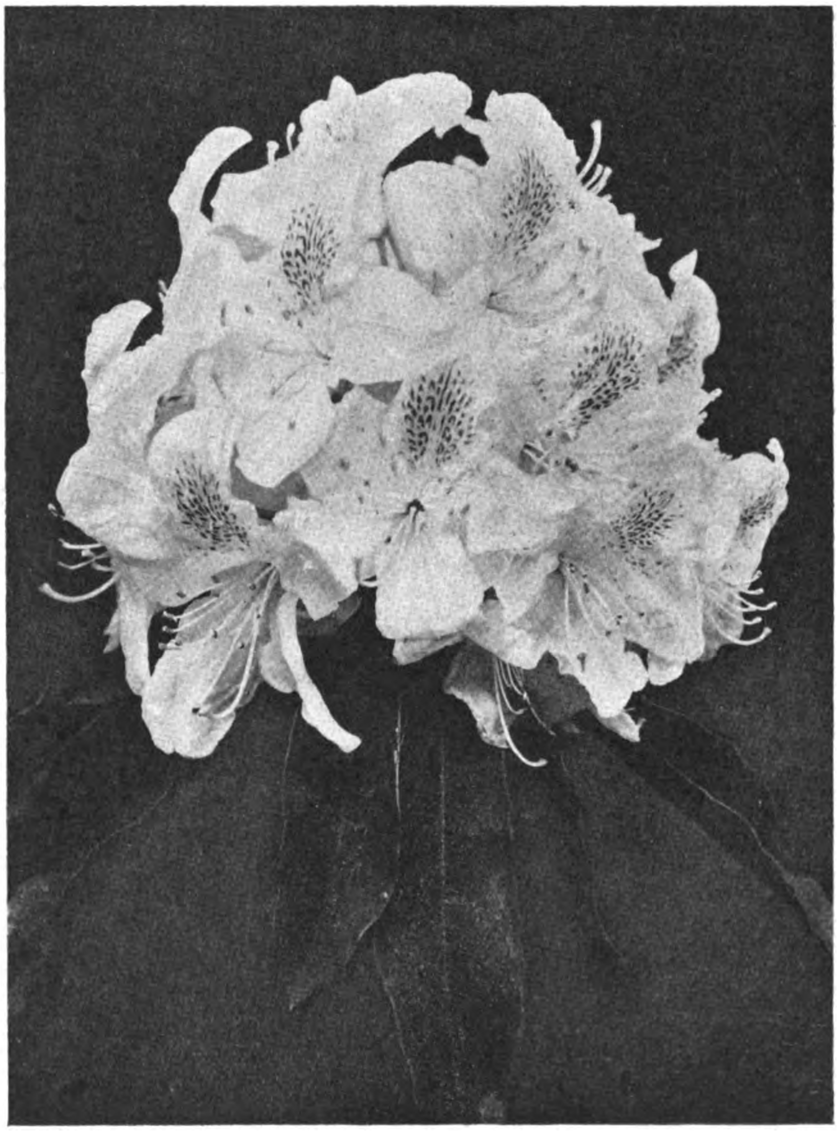

FIG. 190.—RHODODENDRON MRS. WM. WATSON.

White, with brown spots. R.H.S. Award of Merit, June 9. Exhibited by the Exors. of the late Mr. Anthony Waterer (see p. 421).

Vines.—Care must be taken to prevent scalding of the berries when they are at the stoning period. Varieties such as Muscat of Alexandria and Lady Downe's are very susceptible to this trouble. Guard against an excess of moisture at the roots during this period, and admit a little air to the vinery early on favourable mornings, closing the ventilators again late in the afternoons of warm, bright days.

Broccoli.—If not already done make a sowing of Broccoli, Kale and other greens. In northern gardens the varieties of Broccoli that succeed is rather limited. Backhouse's Winter White and Knight's Protecting, both tried and hardy sorts, usually survive the winter; it is always advisable to include Purple Sprouting Broccoli. This type is extremely hardy and comes into use when there are few other vegetables in the kitchen garden.

Endive.—A sowing of this vegetable should be made so that well-grown plants may be in readiness for blanching in autumn. Sow the seeds in drills made twelve inches apart A fairly rich soil is best. Both the moss and green curled types should be grown.

Leeks.—Seedling Leeks raised from seeds sown out-of-doors will now require transplanting in ground that has received a liberal dressing of manure. Frequent applications of liquid manure will greatly benefit the plants, and it should be applied during showery weather.

NOTES FROM EDINBURGH.

The warm weather has been of great value, for at the time of writing (June 11) the garden is at its best. The heavy rains experienced during May prevented a good display of the blossoms of Pyrus and Prunus, albeit a few species of the latter flowered very creditably, particularly Prunus Avium and P. Pseudo-cerasus, of Lindley, a somewhat rare plant.

With the advent of congenial weather there is now a wealth of blossom to which the hybrid Rhododendrons, the gay Azaleas, and several species of Cytisus make notable contributions. Not the least attractive feature of the garden is the varied and beautiful colouring of the young growth of many trees and shrubs, particularly such coppery-leaved trees as Prunus Pissardii and the Copper Beeches, also the dark red and salmon-pink growths of several Ericaceous shrubs such as Vaccinum ovatum and Pieris formosa.

Owing to the bad weather in May the rock garden is backward and only now are Aubrietias, Alyssums, Iberis and Anemones at their best, and these together with bold masses of Saxifraga umbrosa and Aquilegias and Primulas go to make a very fine display. Of the Primulas the most noteworthy in flower are P. chrysopa; P. flexilipes, which is a dainty little species with pale yellow flowers, and hails from South-East Thibet; and the highly decorative Chinese P. Veitchii. These, together with a few species of the capitata section are flowering in the rock garden, and several Candelabras serve to decorate the fringes of the pond as well as parts of the rock garden, the chief species being P. pulverulenta and P. japonica.

The Meconopsis have suffered somewhat from the recent inclement weather, but have nevertheless struggled into flower and M. integrifolia, M. simplicifolia, M. quintuplinervia and the dark blue M. grandis are the most noteworthy. Of special interest in the rock garden is a remarkably free-flowering group of Cypripedium Calceolus, which, together with C. ventricosum album is now, alas!, passing, although C. pubescens still carries on. Another outstanding feature of the rock-garden are the Celmisias, which form very handsome decorative plants, both flowers and foliage rendering them worthy of cultivation. C. holosericea, C. viscosa, and the large-flowered C. coriacea are the best of those now in flower.

Under glass interest centres in the rock house where Fabiana imbricata is to be seen with its gracefully arching branches laden with flowers. An attractive blue-flowered subject is found in Sphacele campanulata, while the red-flowered Sutherlandia frutescens deserves notice. In one corner there is a little New Zealand plant notable for its small white flowers; it is Pimelea longifolia. Opposite is a charming Australian plant, Hibbertia Readii, and it produces a mass of yellow flowers. In this house, too, the pale yellow flowers of Roscoea cautleoides a native of Chile, are to be seen. Iris Hookeri, an interesting member of the genus coming from North America, is also in flower.

Passing to the Rhododendron House, attention is directed to four plants, two of which are notable for their strong scent. They are Rosa moschata and Rhododendron Veitchianum, a Burmese species with white flowers. Rosa moschata is trained up the the roof in one corner of the house and the branches allowed to hang down like a curtain, and these are literally smothered with the fragrant, although delicate blossoms. Another interesting climber is Lathyrus splendens, with pretty pink flowers. The fourth plant of special interest is Rhododendron diaprepes, which is about ten feet high. It is a native of West Yunnan and has large, white, fragrant flowers.

The Cactus House contains Sempervivums and Gasterias, in flower, together with the scarlet flowered Phyllocactus Thalia and Cereus speciosissimus.

Pelargoniums, Calceolarias and Primula obconica form the chief attraction in the Centre House, and Senecio Moorei and S. glassifolius are two highly decorative species also represented. In this house particular attention is drawn to Protea cynaroides; the plant has at last opened its flower head, which is large and formed at the apex of the shoot. Prostanthera lasianthos is also in flower; it is a tree reaching to the top of the house and flowers very freely and looks well. Further along, in the corridor, is a plant of Datura sanguinea trained to the wall, its large trumpets, scarlet at the tip, being produced all over the plant, thus creating a most attractive feature.

In the tropical houses the curious but nevertheless handsome Gurania malacophylla may be seen. It is a member of the Cucurbitaceae and is covered with long, silky hairs. Male and female flowers are produced on the same plant from the axils of the leaves, and they are of a red colour. Another interesting subject that flowered recently is Passiflora violacea, which is remarkable not only for the exceedingly handsome blooms which it produces on fairly long stems, but also for its pleasant scent. On a really warm day, however, when there are a large number of flowers open, the fragrance is apt to become rather overpowering. *Robert H. Jeffers, Royal Botanic Garden, Edinburgh.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

Two species of Hydrangea which are not often to be seen in private collections are well worthy of the attention of amateurs. The first of these, H. vestita, was introduced from the Himalayas in 1821. I do not remember whence it was brought here, but we planted it in the flower garden some thirty or forty years ago, whence, having grown too big for its boots, so to speak, it was transplanted into an adjacent wood. There it was forgotten and got crowded up with forest trees, until I chanced to come upon it two or three years ago, and, finding it well over twenty feet high, had the ground cleared, giving it air and light. It is a handsome shrub or small tree, with narrow, ovate leaves six inches to eight inches long, and in late summer decks itself with broad, flat corymbs of fertile flowers surrounded by white sterile ones, averaging an inch in breadth. Mr. Bean describes this species as neither so hardy nor so useful as H. Bretschneideri, a closely allied species from China, but that shrub lacks the commanding stature of H. vestita which distinguishes it among all others of the genus, so far as known to me.

The other Hydrangea which seems specially worthy of attention is H. villosa, one of Mr. E. H. Wilson's Chinese prizes, if I mistake not. I have seen it only in Mr. McDouall's garden at Logan, where there is a bank clothed with it, a beautiful sight in late summer and autumn when covered with corymbs of pink, lavender or pale blue flowers. The leaves are ovate-lanceolate, six to eight inches long, downy and deciduous. The bushes at Logan grow to a height of seven feet. The species is quite hardy on our west coast and is easily raised from seed.

In a garden where plants are placed somewhat at random it is well to note chance combinations of colour with a view to re-arranging the border. The hue of Hippeastrum (Habranthus) pratense being such an intense orange-vermilion, it is most apt to clash excruciatingly with other flowers; but place alongside of it a good clump of Cynoglossum nervosum and the splendour of the blooms of both will be vastly enhanced. Another good neighbour for this flaming Chilian is Iris florentina, whereof the cool white flowers contrast admirably with the fiery glow of the other.

In the matter of colour, if the figure of Rhododendron glischrum in the *Botanical Magazine*, tab. 9035, is true to the original, then that species must be very variable in hue. Two of our plants have flowered here, neither of which showed any tinge of the disagreeable magenta shown in the plate. Before opening, the flower buds on our plants were bright carmine, changing to pink and white on expanding. The colour effect was Apple-blossom. This is the more remarkable inasmuch as our plants were received in a gift from Mr. J. C. Williams who supplied the original of the plate in the *Botanical Magazine*. Presumably all these came from the same batch of seedlings. I think R. glischrum is likely to prove a valuable plant in this country. It is a strong and rapid grower, but has the desirable quality of starting very late in growth, and its foliage is handsomer than that of its near ally—R. habrotrichum.

Among the innumerable failures which, in common with every amateur I have had to encounter, must be reckoned that brilliant native of the Island of Chiloe—Ourisia coccinea.

Plant it in shady corners is the prescription of authorities in such matters; to which one writer adds, "a hot, dry and exposed position is generally fatal to it." Well, I followed this counsel scrupulously, not once or twice, but times without number, always with the same dismal result—death, sometimes lingering, at other times swift. What was my surprise, therefore, a few days ago to find this coy herb fairly ramping in the garden of a near neighbour. "Shady corners"—not a bit of it! Here and there it was in full scarlet bloom through an open, sunny border, and actually overflowing into gravelled paths. I bore away a liberal clump of it, perhaps to court failure again. Reginald Farrer characteristically describes his experience with this capricious plant, very similar to my own, but in the end he had it "creep-creeping about with indomitable robustness," the fat, fleshy shoots "now trailing over and over each other on the level, and then shinning up the bare rocks to find fresh fields." (*My Rock Garden*, page 270).

No doubt many of your readers have noticed the powerful odour exhaled from the young foliage of Davidia involucrata. Flaming June having this year re-asserted its claim to that title the scent is unusually powerful, and in the prevailing calm air is diffused to a great distance, being plainly perceptible at a distance of thirty or forty yards. It is not unpleasant, somewhat like scent of Eucalyptus, but one may imagine that the atmosphere in a grove of Davidia might be rather overpowering. *Herbert Maxwell, Monreith.*

TREES AND SHRUBS.

OLEARIA STELLULATA.

Compared with the better known O. Haastii this is a species of considerably more merit as a flowering shrub. It may not be so robust as the foregoing, but it has a more pleasing habit, the individual flowers (often over one inch across), borne in dense corymbs during May and June, are a good, clear white with a small yellow eye and they are produced in such abundance that the whole shrub becomes enveloped in them.

O. stellulata is frequently found in gardens under the name of O. Gunniana. We have found it quite as hardy as O. Haastii in our light, gritty soil, and, being of slow growth, it makes a good rock garden shrub. *J.*

CEANOTHUS VEITCHIANUS.

When a plant enthusiast comes across a really fine specimen he immediately desires to make a note thereof for the benefit of others who, like himself, are keenly interested in such matters, so there is really no need for excuse in detailing the magnificent proportions of the Ceanothus, shown on the accompanying photograph. (Fig. 191.) The plant, certainly one of the finest it has ever been my pleasure to view, is growing at Wormley Bury, Broxbourne, where Major Albert Pam, in addition to the keen interest he takes in matters zoological, is now engaged in gathering together a charming collection of the choicest trees and shrubs, with the assistance of that keen, young gardener, Mr. F. Streeter, who keeps watch and ward over the Wormley Bury Gardens.

This specimen of Ceanothus Veitchianus measures fifteen-feet tall, with a spread of twenty-feet in width, by five-feet in depth from the front to the wall against which it grows, and its freedom in flowering is well shown in the illustration. *Edwin Beckett.*

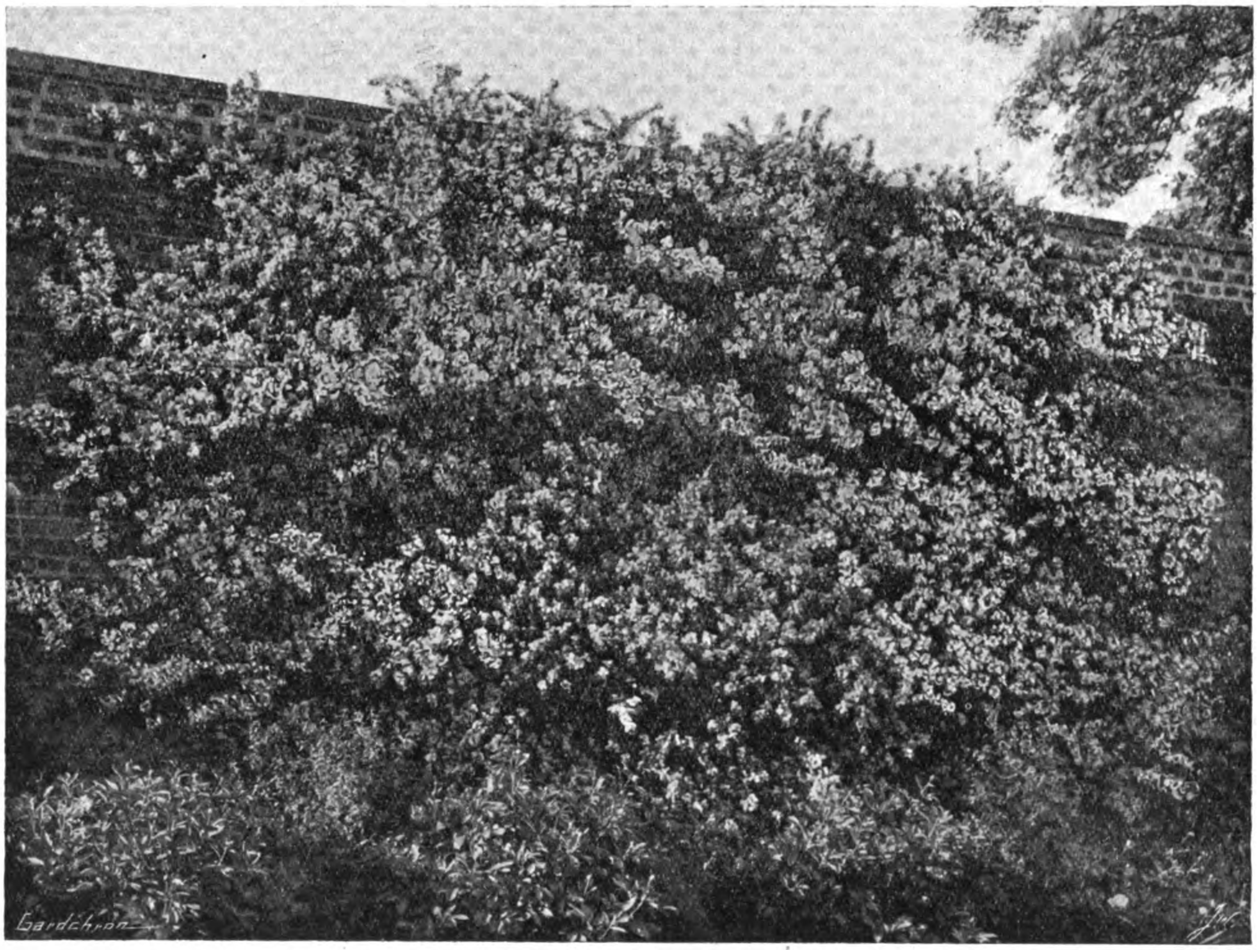

FIG. 191.—CEANOTHUS VEITCHIANUS IN MAJOR ALBERT PAM'S GARDEN AT WORMLEY BURY BROXBOURNE.

POTENTILLA VILMORINIANA.

This variety of P. fruticosa is a shrub of singular beauty, the foliage being very silvery and the creamy-white flowers large and abundant. The flowers are often open here before the end of May, and from that time onwards until early autumn an unbroken succession of bloom is maintained.

P. Vilmoriniana attains the height of four feet with us, but it does not exceed that stature. Whilst most other forms, including the type, of similar height, seem to need an annual thinning-out of the older wood to induce them to flower satisfactorily this variety has flourished for many years without any attention whatever.

Any average border soil will suit this excellent plant, but it should have full exposure to the sun. It may be propagated by cuttings struck in a cold frame in the late summer. *J.*

RHODODENDRON CALOPHYTUM.

The handsome-leaved Rhododendron, R. calophytum (the subject of our Supplement Plate) was discovered by the Abbé David, at Moupin, in Tibet. It was introduced into cultivation by Mr. E. H. Wilson, in 1904, who found it growing abundantly in woods in Western Szech'uan. The flowers are developed in dense trusses; they are whitish-lilac in colour, with an intense, dark blotch on the upper interior of the corolla. The leaves are eight inches to twelve inches long, and sometimes as much as three inches wide; they are slightly pubescent while in the young stage, but later become smooth on both surfaces.

The plant was discovered at a height of nine-thousand feet, where it forms a tree about forty feet to fifty feet high.

Rhododendron calophytum belongs to the Fortunei series, and, according to Millais in *Rhododendrons*, the plant is perfectly hardy anywhere in Great Britain, and the leaves and flowers are of the highest quality. The plant, however, is of slow growth, and there is a danger that the blooms which open in April, may be destroyed by spring frost, although, apparently, the shoots are immune to injury from frost.

This Rhododendron grows splendidly at Kew, and the inflorescence reproduced in the supplementary plate is from a specimen grown at Kew. The finest plants are at Caerhays, the residence of Mr. J. C. Williams. Bean, in *Trees and Shrubs Hardy in the British Isles*, describes it as one of the noblest of Chinese Rhododendrons. He states that the foliage has some resemblance to that of R. sutchuenense; but that species has larger flowers, much shorter flower stalks, and stamens downy at the base.

A SELECTION OF AMERICAN WILLOWS.

(*Concluded from page* 413).

Quite a nice eastern shrub I met with on the White Mountains in New Hampshire is S. planifolia (syn. S. chlorophylla); this reaches northward to Labrador and the Hudson Bay, where it often becomes a very low shrub. It is represented in the west by var. monica (syn. S. monica) from the Rockies to the Sierra Nevada in California. All these forms need a closer study and should be tried in our gardens. The mature leaves are glabrous, or nearly so, while in the following species even the fully grown leaves of the shoots are densely clothed beneath with a fine, shining, silky pubescence. I recommend for introduction S. bella, S. pellita and S. subcoerulea. The first and the last are species of the North West, while S. pellita is found in the East from Winnipeg to Newfoundland and Vermont. The young twigs of these three Willows are mostly distinctly pruinose, and the leaves are lanceolate, measuring up to 2.8 cm., or somewhat larger and broader in S. bella. S. subcoerulea has the finest silvery pubescence.

The section Sitchenses is the last group I wish to mention. Its type species, S. sitchensis is a very peculiar and handsome Willow distributed from Alaska, southward along the coast to Oregon, and also found in Idaho and Montana. S. sitchensis is easily recognised by its male flowers possessing only one stamen, and by the satiny pubescence of the lower surface of its mostly more or less obovate leaves.

In cultivation I have met with this handsome Willow only in the Arnold Arboretum. It is quite hardy and forms upright shrubs with slender, erect branches up to almost 4 metres in height. Bailey states that the characteristic lustre of the leaves is preserved in cultivation. In California it is represented by S. Coulteri, a fine species with a much more woolly, felt-like tomentum.

There are many other American Willows that could be mentioned, but even of those I have dealt with very large numbers are still entirely unknown to our gardeners and to the European amateurs of Salix. I desire to induce as many friends of Willows as possible to take a keen interest in these American species of Salix, which may easily be introduced in our collections, and of which a great many would be valuable additions to our rock gardens and shrubberies. *Camillo Schneider.*

INDOOR PLANTS.

BERTOLONIA AND SONERILA.

These exotic plants are unquestionably amongst the most exquisitely pretty and daintily marked foliage plants grown. They are cultivated for their beautiful foliage alone. Their habit is very dwarf, and extremely beautiful colourings and markings are displayed in every leaf. Some are spotted, splashed, and mottled with rosy-crimson and others with soft pink and silvery-white, which make them quite distinct from any other class of plant.

They require a warm, moist atmosphere, and are best grown in well-drained pans plunged in Sphagnum moss, which provides a certain amount of moisture which is beneficial to the plants. They thrive well in gentle moist heat but do not require excessive warmth. If there is a difficulty in maintaining sufficient heat and moisture through the house being too airy and large, the best plan is to grow them in a small case or handlight with slight bottom heat, propping the lights up at the back about an inch, and taking them off entirely for about an hour every morning, to allow the extra moisture to evaporate should the foliage get too moist, and to prevent the plants from getting weak and drawn. Do not syringe the foliage as it may get too damp, when it would be liable to decay; the plants should obtain sufficient moisture from the dampness in the case or handlight.

Shade the plants from the bright rays of the sun. During dull weather they should be watered with care, and be careful not to allow the water to remain on the foliage, otherwise it will disfigure the leaves by causing them to become spotted. In the autumn and winter give the plants just sufficient water to prevent them from shrivelling.

Both the Bertolonia and the Sonerila are propagated easily from cuttings in the spring and summer. If the plants have grown long and leggy and lost all the bottom foliage, the top may be taken off, put into a small pot, and placed in a close handlight or frame with a fair amount of bottom heat. Such cuttings will soon form roots, and when rooted may be hardened off gradually, and later shifted into larger pots. For this potting use a mixture of good chopped, fibrous peat, a small quantity of light loam, Sphagnum moss, a little charcoal, and silver sand. Well drain the pots with good clean crocks. On no account should these plants be over-potted as they do not require much pot room.

The old stock plants, after the tops have been taken off, will develop young shoots at the base, and so soon as these growths are strong enough they may be used as cuttings. Insert them in small pots and root them in a handlight with bottom heat.

The plants when established may be used in many ways for all kinds of indoor decorations, and are invaluable for brightening exhibition groups, but the specimens must be well hardened before exposure in this way by admitting more air to the frames, or, if the house is quite suitable, they may be stood amongst the general collection of plants. The foliage will stand well if properly hardened.

A few pans of these beautiful plants are very attractive; a few of the best varieties of Bertolonias are Madame Van Houtte, Madame Edward Pynaert, Leon Say, Madame Van Geert, Madame A. Bleu, rosea guttata, Madame De la Devansaye, and Souvenir de Gand. These are a great improvement on the species that have been introduced from time to time, mostly from Brazil; the best garden species are B. guttata, B. superbissima, B. marmorata, and B. maculata.

Sonerila is allied to Bertolonia and the genus comprises a number of very pretty, dwarf, compact-growing foliage plants, which are a great addition to the dwarf, variegated plants required for the warm conservatory or for filling small vases for indoor decoration.

The foliage is not quite so tender as that of the Bertolonia, therefore, these plants will grow freely in a lower temperature—from 60° to 65°. The leaves are bright green above, with circular white margaritaceous spots evenly distributed over the surface, which make them bright and attractive for all kinds of decorations. The flowers are, as a rule, small and inconspicuous, therefore, the inflorescences should be removed so soon as they appear; this treatment will assist the colouring of the leaves, which is the chief attraction in these charming and beautiful subjects.

Thorough drainage, clean pots and crocks are essential to success. Great care should be taken in watering the plants during dull, cold weather. A few of the best Sonerilas to cultivate are S. margaritacea, S. argentea, S. superba, S. grandiflora, and S. laeta. The last is a very pretty, dwarf species from Southern China, a useful addition to this class of plants; it grows freely in a lower temperature than the East Indian Sonerilas. *John Heal, V.M.H.*

THE ROSE GARDEN.

REDUCTION OF VARIETIES.

Most trade growers, I believe, when the sale season is nearing the end, find themselves burdened with the residuum, more or less, and to get rid of this the plants may be sold cheaply, given away, or burned; the last circumstance being the fate of not a few. This is waste which might be prevented, provided growers paid greater attention to the varieties they propagate. The season is opportune for discussing the matter, with budding time near, and those interested might do worse than give their opinions as to the best selling varieties of Roses in the pages of *The Gardeners' Chronicle*.

Growers form associations to try to find means of fighting foreign competition, and as some of us may think, to keep up the prices as well; they try to help each other in such items, and why not, therefore, in cultural methods, the choice of good varieties being one of them. Some cultivators may ask, Why should we give up our knowledge to others? But why not? As remarked, there is no objection to exchanging notes in connection with foreign competition, and it appears to me there is an excellent way in trying to produce the saleable article better and, if possible, cheaper. All this in passing.

There is nothing permanent in respect to varieties of Roses. Some of us are old enough to remember, for example, the hybrid-perpetuals, so-called, as the predominant class; but to-day if a grower continued to propagate these to any extent he would find little demand. Similarly, the Tea-scented varieties; this class is fast on the down grade of popularity. Both have been killed by the modern hybrids. Probably there are less than a dozen varieties in the two sections worth perpetuating in these times; the rest would only be contributing to the residuum for the bonfire.

Careful selection is needed among varieties of the more popular classes; one sort may be wanted for a time, and is then superseded by another, and so on through the seasons. One would not like to state that there are too many new varieties introduced; I do not think there are, and a wise grower should deal freely with these, but at the same time they should not be reproduced without much discrimination.

I venture to skim through the list of varieties and note failings or otherwise, giving, of course, only my own impressions. I have no feeling in the matter and write as a lover of Roses.

Dealing first with the great division of hybrids, in which for this purpose Pernetianas will be included, there are:—Admiration, excellent; America, disappointing; Annie Laurie, not distinct enough; Augustus Hartmann, useful; Betty Uprichard, a superb variety; Caroline Testout, a standard pink; Clarice Goodacre, worth growing; Columbia, only fair in the open; Cynthia Forde, worth a place; Edal, good for "show"; Emma Wright, first-rate; Etoile de Hollande, good; Frances Gaunt, nice; General McArthur, a standard sort; Golden Emblem, one of the best; Gruss an Teplitz, has its uses; Hawlmark Crimson, fine for massing; Henriotta, effective; Hortulanus Budde, good colour; Innocence, bedder; Isobel, capital single; K. of K., effective bedder; Lady Alice Stanley, worthy; Lady Inchiquin, fair; Lady Hillingdon, first rate; Lady Pirrie, good; Lord Charlemont, a likely crimson; Los Angeles, a grand variety; Lauria, a likely thing; Mabel Morse, superb for colour; Mme. Abel Chatenay, a standard variety; Mme. Butterfly, not distinct in the open; Margaret Dickson Hamill, quite good; Miss Willmott, pretty; Mrs. Beckwith, promising; Mrs. C. V. Haworth, deserving; Mrs. George Shawyer, noble; Mrs. Henry Bowles, a capital variety; Mrs. Henry Morse, has first-rate qualities; Mrs. Herbert Stevens, excellent; Mrs. Redford, good colour; Mrs. Wemyss Quinn, quite good; Nellie Parker, a likely variety; Ophelia, a standard kind; Pax, should be grown; Rev. F. Page Roberts, fair; Richmond, a good red; Ruth, should be better known; Souvenir de Claudius Pernet, too uncertain; Souvenir de Georges Pernet, a capital variety; The General, worth a place; The Queen Alexandra, distinct; and William F. Dreer, charming.

New Roses that have taken my fancy include Margaret McGredy, Shot Silk, Mrs. E. J. Hudson, and in a less degree Marcia Stanhope. The last-named may never approach the peerless white Frau Karl Druschki.

The dwarf-growing polyantha varieties are scarcely likely to be overdone; more especially Orleans, or any form of it. I like La Reine Elizabeth for its rich colouring.

Climbing or rambling kinds that please are American Pillar, Excelsa, Havering Rambler, Jersey Beauty, Mermaid, Hiawatha, Paul's Scarlet Climber, The Beacon, William Allan Richardson, and Star of Persia, the last being among the new ones of merit.

Exhibition Roses, as we used to understand them, with large, handsome blooms, without a thought of the habit of the plant, are possibly not worth catering for in these times; general merit is the desire, and here those who at times may be engaged in making a report of an exhibition have a chance of noting how few are the striking kinds. These have to be named, in passing from one exhibit to another, with almost tiring monotony. Similarly, in passing through the lines of plants in nurseries, it is the few which are retained in the memory after the visit is over. It is well, therefore, to concentrate upon that limited number.

A grower of a hundred thousand plants say, will at lifting time, be in a stronger position with a limited list of varieties, all carefully thought out as likely sellers, than one with the same number of plants in endless variety, many of which are not likely to be asked for.

It is not claimed for the above list of names that additions cannot well be made. If, indeed, half as many again be added, or for that matter an equal number, even then the collection would not be bulky, but I would suggest a free use of the pruning knife in cutting down the lengthy printed lists that obtain. *H. S., Woking.*

ROYAL HORTICULTURAL SOCIETY'S GENERAL EXAMINATION IN HORTICULTURE.

MARCH 25TH, 1925.

SENIORS.

ONE-HUNDRED-AND-TWENTY-FOUR candidates were examined, and of these fourteen were placed in the first class, thirty-three in the second, and thirty-four in the third, leaving forty-three who failed to satisfy the examiners.

The examiners report that the general standard of the answers showed a marked improvement on that of last year. A very fair proportion of the candidates showed good knowledge of the elementary botanical principles underlying the processes of horticulture, but a minority either had not appreciated the standard of knowledge required or were inadequately prepared for the examination.

Questions seven and eight brought some good answers, but candidates should be more careful to study the exact wording of the questions set, as they frequently lose marks by misreading the questions. Very few candidates showed good knowledge of the vegetable question, and the examiners wish to impress on intending candidates the importance of studying the successional cropping of vegetables.

JUNIORS.

Of the twenty-one candidates who were examined, six failed, and of the others, seven were placed in the first class, four in the second, and four in the third.

The examiners report that the answers of the majority of candidates left much room for improvement, the general standard being poor and showing a lack of education. A few of the answers were good, but it is noteworthy that the only purely botanical question in the paper was avoided by all but two candidates, and that there is a bias in favour of physiology, which is natural and perhaps desirable.

Many candidates, when answering the question on root-pruning of fruit trees, apparently did not realise the importance of taking the utmost care of the fibrous roots, but simply advised taking out a trench and cutting all the roots which they came across. Other answers on pruning showed a lack of observation of the different ways in which fruit trees bear their crops. Simple observations of this kind should be within the scope of anyone employed in practical horticulture.

SENIORS.

Class 1.—1, Miss G. M. Roberts, Studley College, Warwickshire; 2, Miss K. M. White, Old Henwick Farm, Newbury; 3, M. H. Moore, Wantage Hall, Reading; 4, Miss D. Sunderland, Studley College; 5, D. Crosland, New House, Outland, Huddersfield; 6, Miss C. E. Fisher, Studley College, and E. A. Garrett, The Lawn Gardens, Swindon; 8, Miss H. Thursfield, Studley College, W. 9; L. Holden, 23, St. Mary's Cottages, Merton Park, S.W., and Miss D. L. Haley, Studley College; 11, A. S. Clements, R.H.S. Gardens, Wisley, and Miss K. M. Mills, Walmoor College, Chester; 13, Miss J. Emery and Miss F. Pooley, Studley College.

Class 2.—1, M. Sefton, R.H.S. Gardens, Wisley; 2, Miss V. Walton, Dunmore, Lansdowne Road, Hove; A. R. Fowler, R.H.S. Gardens, Wisley; F. C. S. M. Robinson, R.H.S. Gardens, Wisley; and Miss H. Sand, School of Gardening, Clapham, Worthing; 6, G. B. Begg, Midland Counties College, Sutton Bonington, and Miss J. M. Lewis, Studley College; 8, L. Dufton and A. Lundy, Midland Counties College, Sutton Bonnington; Miss R. E. Yates, Studley College; G. E. Hindley and E. V. Roe, R.H.S. Gardens, Wisley; 13, S. A. Goodliffe, R.H.S. Gardens, Wisley, and Miss W. Davey, Studley College; 15, E. W. Mercer, Berks and Bucks Joint Sanatorium, Peppard, Oxon, and Miss J. F. M. Carter, Canal Hill Nurseries, Tiverton, Devon; 17, Miss J. G. Lievin-Bauwers, Studley College; 18, Miss E. Heaven, Appleshaw, Pyrford, Surrey, and R. G. Rutherford, R.H.S. Gardens, Wisley; 20, Miss E. R. Osborne, Garden House, Middle Hill Park, Broadway; J. W. Breed, Hipswell, Richmond, Yorks; Miss A. M. M. Brown, Studley College; C. E. Daniels and E. J. Reed, R.H.S. Gardens, Wisley; 25, R. J. Garner, Wantage Hall, Reading; Miss E. M. Baxford and Miss B. E. Burstow, Studley College; 28, Miss C. M. Herbert-Smith, Old Henwick Farm, Newbury; H. W. Wearing, Haverbreaks Lodge, Lancaster, and J. H. Lock, R.H.S. Gardens, Wisley; 31, Miss P. A. Martin, 53, Albion Place, Reading; Miss E. L. Whitworth, Studley College; and E. C. Wilcockson, R.H.S. Gardens, Wisley.

Class 3.—1, P. Clare, 62, Lindum Avenue, Lincoln, and D. Mackenzie, R.H.S. Gardens, Wisley; 3, L. R. Astley, Dunnikier Gardens, Kircaldy; K. McCready, Aldenham House Gardens, Elstree; G. Cottrill and W. H. Fentiman, R.H.S. Gardens, Wisley; 7, L. W. Rowley, 73, London Road, Reading; G. Soane, University College, Reading; E. S. Littlejohn, Midland Place, Liphook, Hants; Q. McC. Craig, R.H.S. Gardens, Wisley; and Miss L. M. Heap, Walmoor College, Chester; 12, A. Turner, 80, Botanic Avenue, Glasnevin, Dublin; 13, P. Robertshaw, Boys' School. Offerton, Stockport, and L. A. Bailey, R.H.S. Gardens, Wisley; 15, E. Hilton, 29, South King Street, Blackpool; and C. J. Coe, 15, Marl Street, York Road, Wandsworth, S.W.; 17, N. H. Morrison, 6, South Oxford Street, Edinburgh; and R. E. Eastwood, Herne Road, Ditton Hill, Surbiton; 19, E. Smith, The Lodge, Hawhill Public Park, Normanton; and Miss E. Ram, Downe House, Downe, Kent; 21, C. G. Agate, 89, Gloucester Road, Kew; 22, J. F. Harness, 4, The Rush, Merton Park, S.W. 19; 23, Miss M. C. Jespers, Studley College; and E. Parker, Barton St. David, Taunton, Somerset; 25, G. Dicks, Glanrhyd Nursery, Gorslas, Llanelly; and Miss F. Netherwood, 19, The Rydings, Beighton, Huddersfield; 27, H. Welsh, 32, Malmesbury Road, Coborn Road, Bow, E. 3; R. H. Bishop and L. B. Creasey, R.H.S. Gardens, Wisley; 30, Miss M. Mercer, 75, Marine Parade, Worthing; 31, H. J. Rixon, Hartford Agricultural Institute, Oaklands, St. Albans; E. W. Studley, 47, Napier Road, Isleworth; J. F. Thomas, 27, Ruislip Street, Upper Tooting, S.W. 17; and W. H. Scorer, R.H.S. Gardens, Wisley.

JUNIORS.

Class 1.—1, Miss M. Watson, Studley College; 2, John Ivison, University College, Reading; 3. Miss M. Hopkyns, Studley College; 4, H. T. Skinner, R.H.S. Gardens, Wisley; 5, J. N. Cusson, Kirton Agricultural Institute, Boston; 6, C. W. Long, and 7, L. Telfer, R.H.S. Gardens, Wisley.

Class 2.—1, Miss I. H. Headridge, Walmoor College, Chester; 2, J. E. Morrison, Broughton, Lechlade, Glos.; 3, J. Etches, Herts. Institute of Agriculture, St. Albans; 4, Miss E. Rickards, The Poplars, Boxmoor, Herts.

Class 3.—1, F. L. Simmonds, Ivy Villa, Hursley Road, Chandlersford; 2, J. E. Wilding, Heaton Park, Manchester; 3, J. Bruce, The Castle Gardens, Alnwick, Northumberland; 4, R. Erskine, Houston Head, Houston-by-Johnstone.

CULTURAL MEMORANDA.

ON WATERING.

WATERING is one of the most important operations in connection with the cultivation of plants. Rain water should always be used where available. Too much importance cannot be given to the storage of water collected by the roofs of glasshouses and other buildings. The cause of sickly plants is often due to the use of hard water, which contains injurious mineral deposits. Water from wells or mains should be allowed to become thoroughly aërated and warmed before being used.

The soil in seed-pots and pans should be moistened by immersing the receptacles in a vessel containing tepid water before the seed is sown. Tender seedlings require special care. Some seedlings must not be watered overhead, especially when the young plants are crowded, or "damping" will ensue.

Before potting plants the roots should be in a moist condition. Heavy watering of plants immediately after they have been transferred to larger pots should be guarded against. Exception to this rule may be necessary during very hot weather and when dealing with well rooted, hardy subjects.

When the practice of spraying overhead is adopted the surface soil will often appear moist whilst the bulk of the soil is dry.

During the summer the regular routine of watering should be undertaken during the afternoons. In winter, watering should be undertaken during the forenoon. There will, of course, be exceptions to this rule, especially on hot days during the summer when plants such as Chrysanthemums may need attention several times during the twenty-four hours.

Cuttings in propagating cases often fail owing to the rooting medium becoming too dry. The practice of sprinkling the foliage gives a false impression of moisture; a close examination is necessary.

Salad plants require abundant moisture to promote succulent growth. Transplanted seedlings should be watered before they suffer from dryness. The germination of seeds during periods of drought may be helped by watering the drills previous to sowing. The value of hoeing between established crops cannot be over-estimated. A fine tilth conserves the soil moisture. When water is applied to crops the stirring of the soil should follow immediately. Much harm is done to crops when water is poured directly upon the stems of the plants. Peas should have the soil between the rows thoroughly soaked. The practice of mulching with half-decayed manure, lawn grass, or leaves should be followed in preference to constant watering.

Late-planted trees and shrubs, and especially specimen evergreens, require attention during dry periods. The evergreens may be sprayed overhead during the evenings. Wall trees and climbers need copious supplies of water during the summer. Tennis lawns and greens, used for games, should always be watered during the evening. Where the garden hose is brought into use for conveying the water direct to the crops care must be taken that the force of the water is not too great. Established trees may be afforded water through a hose, the end of which may be placed on a board, for this will prevent the washing away of the soil. *C. Ruse, The Hyde Gardens, near Luton.*

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ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C. 2.

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

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Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

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MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.

XI.—In the Rhododendron Fairyland.

TOWARDS the end of June we paid our first visit to the Himalayan range, which was not very far away, though we had one range of mountains to cross, as well as a large river. However, we reached our camping ground on the third day. So great was the quantity of snow on these mountains that, not being true mountaineers, we had to camp very low down, at about 10,500 feet; even so we found ourselves at the foot of a huge avalanche. But the pass itself here is only 13,500 feet. The rains had already begun, and it was obvious that there would be no more fine weather for some time.

On the way up from the river we passed through Pine forest below, in which were two species of Pinus, one a very fine tree with large cones like those of P. Armandii and five rather short and slender needles. There also grew here, Birch, Poplar, Maple, and Bamboo, with thickets of Deutzia, Pieris, and Rhododendron, the last comprising the "Taliense" and "Triflorum" species already described; these, however, were over. A little higher up we entered the Picea forest, where the bigger tree Rhododendrons, the "Grande" and smooth-barked "Fortunei" species flourished. There were also open, boggy meadows, full of Primulas and of violet Irises. So bad was the path here, across quagmires and mud wallows, that the men said it was impossible to get the transport through, and requested us to camp in the first meadow. This we declined to do, and a little coaxing of the Tibetans on our part, and of the ponies on theirs, overcame the difficulty. Even so, however, we had to camp in the next meadow, and having had to ascend only some 1,500 feet from the river, I imagined we should have much difficulty in reaching the alpine region from camp. However, I was wrong. The site selected for camp was the apex of a large wet pasture, in the angle between two boisterous torrents, one from the avalanche, the other from the pass. The ground was boggy, otherwise it was not a bad place. The pasture was surrounded by steep, forested slopes, and a tremendous cliff frowned down on us, flanking the steep valley which led to the pass. The first thing to do was to throw log bridges over the two torrents, the next, to cut a path through the forest up a steep flank of the hill to join the track to the pass, which we had left some distance back; while this was being done we could make a preliminary excursion to the alpine region up the big avalanche, which afforded an easy route out of the forest.

Meanwhile, things had been happening on the spot, for I found three species of Rhododendron in the meadow. The first was not yet in flower, though it opened a few flowers before we left. However, as it was a wretched little thing with pale yellow, spotty flowers,

> "Patch'd with foul moles and
> eye-offending marks"

and bristly stems, I need say no more about it than that it formed low bushes in the bog. It was obviously one of the Trichocladum series, most of which are unlovely. The second species was a horse of another colour. Its large, flattened flowers of brilliant rosy purple, recalled R. calostrotum, to which it is clearly allied. This splendid "Saluenense" lined the banks of the torrents and formed little patches of undershrub in the meadow and on the rocks. Later we were to see it in the alpine region forming ankle-deep drifts of royal purple. The third species, which became known as "Coals-of-Fire," was yet finer—a large bush hung all over with blood-red flowers, and at the base of each corolla, five coal-blacks glands; these honey glands were not just pinched up pouches, dark by contrast, as for example in R. Delavayi, they were actually shallow black pits, jet black discs on the scarlet corolla. The glabrous leaves and scarlet flowers of this bush recalled the "Thomsoni" group, but I could not place it there with any certainty. It is not an "Arboreum," though in the forest it does sometimes form a small bushy tree.

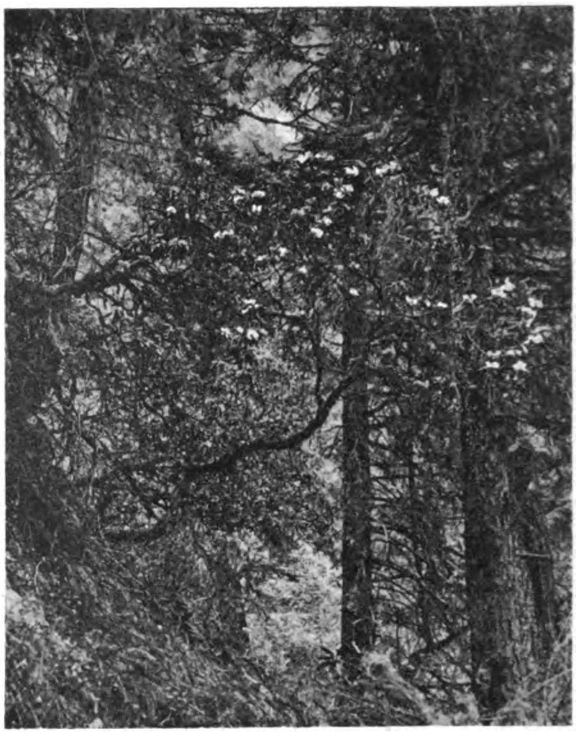

FIG. 193.—RHODODENDRON SP., § "TALIENSE" (K.W. 5656).

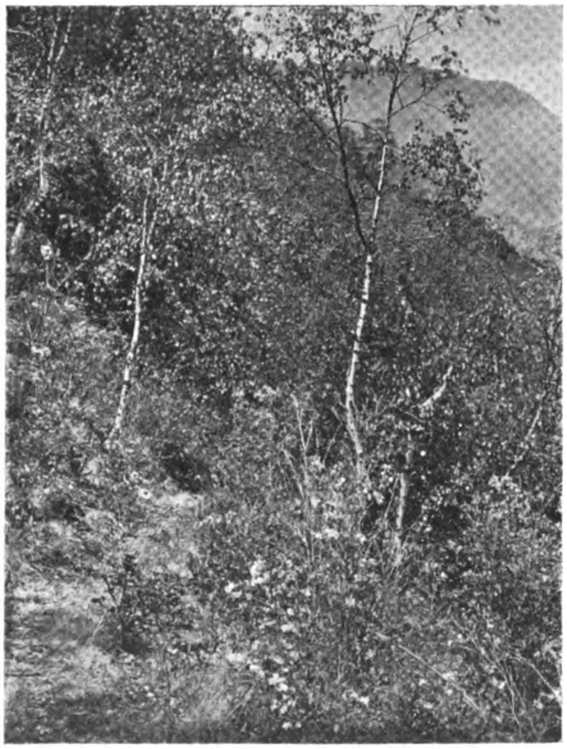

FIG. 194.—BIRCH COPSE WITH RHODODENDRON SP., § "TRIFLORUM" (K.W. 5687).

With such a start we felt confident that we were going to find Rhododendrons in bulk; nor were we disappointed.

Next morning we clambered up on to the steep surface of the avalanche, and started up the valley. On one bank we soon came upon a dense scrub of pale-flowered "Souliei" Rhododendron, which I satisfied myself was not the forest species previously met with, though it differed from that chiefly in technical details easily distinguished with a pocket lens. After climbing something less than a thousand feet, we got out of the dense scrub on to the alpine turf slopes, striped with the purple of "Saluenense" and with thickets of a pretty, pink-flowered species, quite like R. glaucum. It had the brilliant silver underleaf surface of that plant, the flat corymbs, and the curiously hooked style seen in the "Boothii" type of flower, and also in the "Campylogynums"; but it happily lacked the vile stench of the yellow-flowered species found on the North East Frontier, and above the Taron river. Shortly after this the miracle happened. I was looking across the torrent to the steep, turfy slope opposite, which faced the sun. "Just look at those bright scarlet leaves," I said to Cawdor, indicating a patch which covered a rock. He sat down, took out his spy-glass, and looked at those scarlet leaves. "Why," said he, after gazing

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The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30 September 27, November 1, 1924, April 4, May 9 and June 6, 1925.

for half a minute, "it's a flower—it looks like a Rhododendron." I took the glass from him, looked, and almost shouted. It *was* a Rhododendron—such a one as we had never seen before, laced to the rock, its big trumpet flowers, twice as big as the leaves, lying prone, and of the most torrid scarlet imaginable. Here indeed was a rock plant! It plastered the cliffs, ate like fire all up the grassy slopes, visible a mile away. In vain we tried to cross the torrent, but ascending on our side, seeking a passage, we soon came upon our prize again. It was a "Sanguineum," with the tiny leaves of R. repens (though longer and narrower) and big trumpet flowers which are larger than the leaves. No part of the plant rises two inches above the surface of the rock—indeed the corolla itself, lying on its side, marks the height of "Scarlet Runner" as we called it.

We continued the ascent, now amidst great snow drifts. Suddenly we found ourselves thigh deep in a perfect wilderness of scrub Rhododendron. There were acres of the pale yellow "Souliei," matched with long bands of pink "Lacteum," and tangled up with these were rosy "Glaucum," and clots of snow-white "Anthopogon"; while from every rock and cliff "Scarlet Runner" hung in festoons of flame. On the more exposed slopes seas of purple "Saluenense" surged round little islands of violet "Lapponicum," crested here and there with the pale pink of another "Anthopogon." We were entranced, despite the drizzling rain and flying mist. Such a maze of blazing colour we had never seen before; but there was more to come.

We climbed till we came to deep snow drifts and a wilderness of rock; then crossed the harsh ridge into the main valley below the pass. Here the rain mist, driving up from the Assam Valley, was worse than ever, and we could not see where we were going. Great snow fields loomed up dimly, and steep, ice-scored ledges, while below we could hear water crashing amongst the rocks. What we could see at our feet, however, was a garden of dwarf Rhododendrons, more bewildering and lovely than any yet seen. There were hassocks of a tiny "Campylogynum" with plum-coloured flowers (known as "Plum Warner"!) another creeping "Sanguineum" with slightly larger leaves than "Scarlet Runner," deep crimson flowers, also larger, and trusses of two or three flowers, whereas in "Scarlet Runner" the flowers are always solitary. Then covering the lower slopes was a tangle of a third "Sanguineum," larger again, with flowers of bright carmine—it was called "Carmelita"; and mixed up with it, another "Glaucum" with flowers of deep cherry-red. As we descended the steep face, enveloped in Rhododendron, two more species of "Anthopogon" made their appearance, one with sulphur-yellow, the other with redder flowers than the former species—a warm brick red; and finally we met with a little pale pink flowered "Campylogynum," which formed cushions on the exposed flank of the valley.

Having at last hit off the path, we descended to camp with our dozen new species, well satisfied with the day's outing.

On the following day we went straight up the main valley by the made path, and after crossing several snow drifts and climbing a rather steep face of soft snow, we reached the pass, and descended a hundred yards on the other side to try and get a view. However we could see absolutely nothing but snow and heavy mist which came rolling up all the time. The pass is 13,500 feet. We were now at the top of the Himalaya once more. Below us lay the Abor Hills. We debated whether we should make a trip over to the south side of the Himalaya—it did not look very pleasant. But something we found stuck up in a cairn on the summit of the pass decided us; it was a large-leafed Rhododendron shoot, whether one of the "Falconeri" or "Fulvum" series I could not decide; but the wooly indumentum was a beautiful cinnamon-red. Straightway we determined to go down at least as far as where that tree grew—it certainly did not grow on our side of the pass. It was as well we made that resolution, for it was to lead to great results.

For the next two or three days the weather was very soft and we were compelled to stay on a day or two longer than originally allotted to this excursion. However, on June 29 we rose early, had a good breakfast, put some lunch in our pockets, and with two Tibetans, started for the pass. We climbed the 3,000 feet in just under two hours, and stood on the summit looking over the wide expanse of snow below us. The descent was worse than anything we could have believed possible even for a track used by jungle men. The snow slopes were extensive and soft, in fact for a long way down we could see nothing but snow; where lower down the snow ceased it was only because there was an almost vertical cliff, streaming with water, which we had to descend.

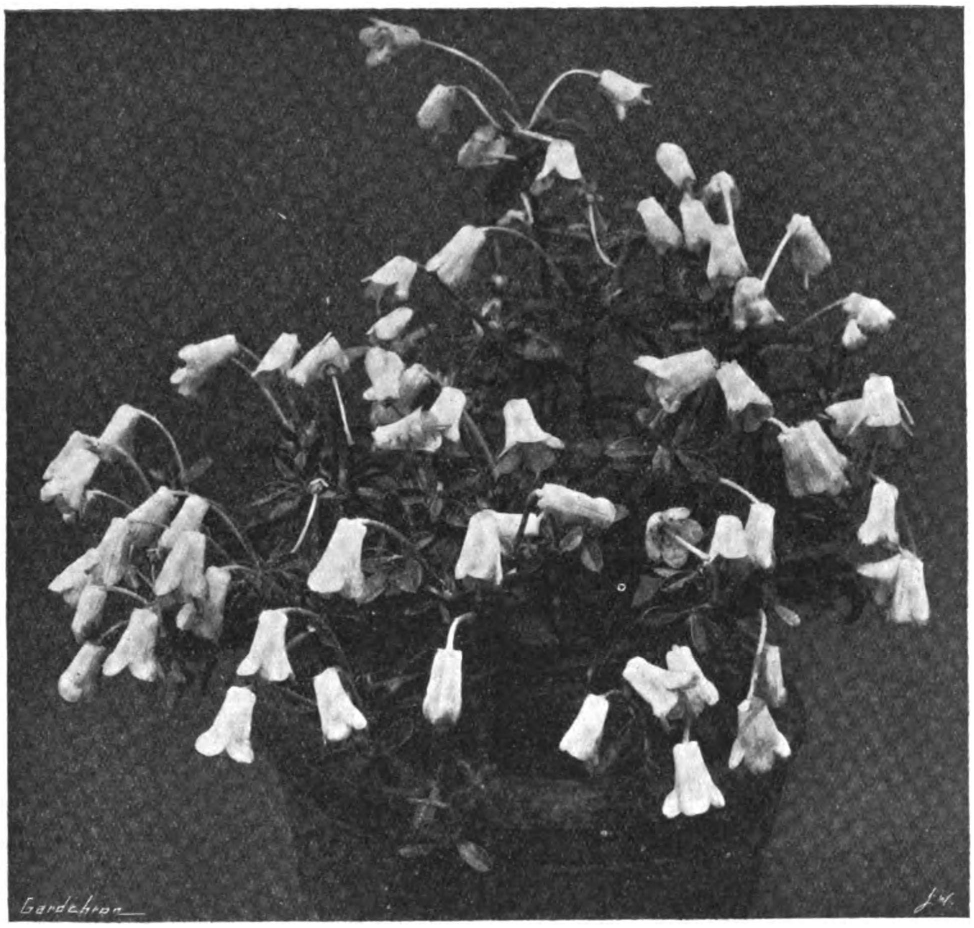

FIG. 195.—RHODODENDRON MYRTILLOIDES.

A small, pink-flowered species discovered by Mr. F. Kingdon Ward. R.H.S. Award of Merit, June 9; exhibited by L. de Rothschild, Esq. (see p. 420).

But it was while descending the cliff, and from its foot onwards, that we found ourselves in an immense profusion of Rhododendrons once more. Here they were all small bushes, forming a tangled scrub three or four feet high, and almost impossible to penetrate. One species had large, white, trumpet flowers, speckled all over with purple; another, creamy flowers edged with pink; a third, carmine flowers; a fourth, also carmine flowers, but with a huge calyx. But by far the most astonishing of all—and that not rare—was a bush with hanging tubular flowers like those of R. Roylei or R. cinnabarinum, but of a deep orange colour. Orange—a real pure orange—is the rarest colour amongst Rhododendrons. It occurs in R. javanicum, which being a hothouse species, is not often seen in England. And now we had at last found one which was likely to be quite hardy, seeing that it was only just in flower on June 29, and showed no signs of breaking as yet. Naturally we were elated.

One new dwarf species we found, with purple flowers, but I could not place it. It was neither a "Saluenense" nor a "Campylogynum," but something quite different. Of course many of our old friends, such as Scarlet Runner, Carmelita, Scarlet Pimpernel, and others grew on this side; but we did not bother about them amidst such a wealth of new forms.

After descending the cliffs, we came to a valley where the snow was piled mountain high; and crossing this obstacle, we presently reached a big meadow, or rather a marsh, ankle deep in water. We had now descended about 3,000 feet from the pass and reached the edge of a dense forest. It would have been interesting to push on, but we could not do it. We had a very stiff climb before us, the day was half spent, it was pouring with rain, and we were soaked through; we had reached our objective—the first big-leafed tree Rhododendron, and no good purpose would be served by over-doing it.

This tree Rhododendron—a "Fulvum," I think—grew on the edge of the forest and was here about twenty-five feet high; lower down in the depth of the forest it no doubt grows much larger. The flowers—white speckled with purple, in fat trusses—were almost over, and the buds were just beginning to break. The huge leaves, dark green above, bright cinnamon red below, were beautiful.

Reluctantly we turned our backs on the forest and faced the horrid climb to the pass. It took us, with halts to mark Rhododendrons, nearly three hours, and we were almost frozen by the time we reached the top. However, we got back to camp at six o'clock, after ten hours work. We had seen the Abor jungles, and we have not seen the last of them yet; I shall have more to say about that country later. *F. Kingdon Ward.*

THE GARDEN IN ANTIQUITY.

VII.—MUMMY PLANTS IN ANCIENT EGYPT.

It would be easy to shirk my present task on the ground that the subject has already been ably treated, and is still being worked out by others. I could refer to *The Gardeners' Chronicle* for March 14 last (p. 183), where is to be found a Review of Keimer's *Garden Plants of Olden Egypt*, and ask the reader to accept that in place of a chapter from myself. But my own work would thus be left incomplete, and the line which is followed in these chapters is quite new and independent, while the material is inexhaustible. It is proposed, therefore, in the present paper, to take first of all the most recent evidence on the theme of Early Egyptian gardening and allied subjects, as illustrated by discoveries in the royal tombs.

There was a flutter in the dovecotes of the botanists when it was announced that in the tomb of Tut-ankh-Amen was found "a unique basket containing fruit, besides a box of food intended for the use of the King in the next world, and magnificent floral bouquets, splendidly preserved." When, a few days later, it was reported that the funeral bouquet was of a pattern often represented on Egyptian monuments and "consists of foliage and flowers as yet unidentified," the questions naturally arose—is it possible that new light may be thrown on old-world botany? Is it likely that any addition will be made to our knowledge of Eastern plant-lore? Or can we reasonably hope from these discoveries to learn anything fresh about the garden-craft of ancient Egypt? In spite of the fact that the foliage and flowers have not been identified it still remains possible to give a fairly definite reply to these and kindred enquiries. Let us state the grounds upon which this assumption is based.

We begin with this reflection that this is by no means the first time in the history of Egyptian exploration that flowers and foliage, fruits, cereals and seeds have been found in the royal tombs. Long years ago a similar interest was aroused among students of plant-life and flower-lore, and great curiosity was excited to learn what plants were known to the ancients and which of them played a part in the obsequies of the great. From this, as well as from other sources, we learn something about the range as well as the limitations of their numbers. Three thousand years ago, notwithstanding "all the learning of the Egyptians," and their great skill in agriculture and horticulture, the range or choice of plants suitable for royal wreaths and funeral bouquets was far from being extensive. Many of the choice plants used by the florists of to-day in making garlands and other tributes for the departed were quite unknown. True, our study is not limited to floriculture, much less to that special branch of it which relates to funerary offerings, but for the present this is the topic peculiarly under consideration. When we have seen what may be known about the flowers found in tombs and the plants devoted to the departed, we shall be able to extend our survey to other branches of horticulture.

Much, therefore, as one would rejoice to think that something really startling has been brought to light for the botanist and gardener, the student of folk-lore and the archaeologist, we must be prepared to hear that the wonderfully preserved bouquets contain no new blossoms, and make no new additions to the species which have long been known to function as symbols and offerings. To give an account of all the different flowers and plants which have hitherto been discovered in the royal tombs is beyond the scope of the present chapter, and it must therefore suffice if we name a few of those which possess the greatest interest.

The plumes of golden blooms which are sold in our streets in early spring under the names Mimosa and Acacia represent an enormous number of herbaceous plants, shrubs, and trees, some of which have been known for ages in Egypt and Arabia. The Acacia was grown by the very early inhabitants as a cultivated plant, and flourished exceedingly because some of the species were indigenous. Although the word Acacia is given in our dictionaries as Greek, and is said to be derived from ἀκίς, *acis*, a point or thorn, I remember that many years ago, when I was steeping myself in Eastern flower-lore, a distinguished Egyptologist informed me that the name was very probably Egyptian, and could be better explained by reference to that language than by resorting to Latin, Greek, or Sanskrit. The Acacia was certainly not tabued* by the florists, any more than it was by other craftsmen. We are told, on the best authority, that in the deserts of Arabia and in many parts of Egypt the finest tree is the Acacia (A. Seyal), and that this was the Shittah or Shittim of the Old Testament. Another species (A. nilotica) grows by the Nile, and a native Egypt name *Sunt* is attached to it, equivalent to the Hebrew *Seneh*, the designation of the Burning Bush (Exodus III. 2).

The plant, however, which during many centuries or even milleniums has been the favourite in Eastern lands is the lovely Lotus. To bring together a tithe of what has been written about the Nymphaea or Nelumbium would be to fill a volume. It is known everywhere in the Orient from Egypt to far Japan, and is the regal relative of our own exquisite Water Lily. The choicest collection I ever saw was in the Botanical Gardens at Singapore; but one finds it in the tanks connected with all Buddhist temples, and in the lakes and gardens of all lovers of beautiful plants in India and China, Malaya, and Japan. It is of various colours, and has, from time immemorial, been regarded as a sacred plant. It was "not merely a symbol, but frequently the object of worship itself. From the throne of Osiris it rises in the midst of the waters, bearing on the margin of its blossom the four genii." And as in Egypt so in Asia. The Goddess of Mercy, Kwan-yin, worshipped by the Buddhists, is seated on a lotus. The invocation *Om mani padme hum*, degraded to *Ommany pemmany*, repeated one-hundred-and-eight times means "Hail, Jewel in Lotus, Hail!" We found it some years ago, carved in Sanskrit, over the portal of a temple in South China. This, too, is the flower which is intended in the statement that Solomon carved the chapiters which were upon the tops of the pillars in his temple so as to resemble Lily work. Here we find a characteristic of Egyptian architecture, just as the Acanthus was characteristic of Grecian. Farther, in the paintings often seen in Egyptian tombs and temples the Lotus is constantly in evidence. It is, moreover, less conventionalised than most of the plants thus represented, so that one never finds any difficulty about its identification. It may therefore be confidently affirmed that the Lotus was one of the favourite flowers in old-time Egyptian gardens.

We know that the Papyrus also finds a place in the tombs. This graceful reed from which paper was originally made, as the etymology suggests, was formerly abundant on the Nile, and it is of interest to note that, when northern and southern Egypt were united under one ruler, the fact was set forth pictorially by combining the Papyrus with the Lotus. Though now no longer found in many of its ancient haunts, it is still plentiful in Syria and Palestine.

The Poppy has been reported from the Egyptian tombs, and when the pollen was examined under the microscope it was found that the grains exactly resemble those of the recent plant. The Cypress also is a plant whose foliage has for ages past been associated with sepulture in almost every part of the world. Not only were the green sprays used for wreaths, but the tree was planted in avenues leading to the burial ground, or set near the graves of the departed, just as may be seen in Italy and elsewhere to-day. Henna, too, was ever a much favoured plant, and the evidence of its early use is to be found in the fact that the nails of mummies buried thousands of years ago are dyed with the juice just as are the nails of the people to-day. This plant, which closely resembles our Privet, is known to be exceedingly fragrant. Indeed, so strong is the perfume that many people find it objectionable and nauseating, just as our own Hawthorn sometimes is when flowering in rich profusion.

Flax was cultivated alike in the garden and the field. This plant seems always to have been employed in the earlier dynasties for the manufacture of mummy cloth. To Pliny we owe an allusion to the fine linen anciently produced in Egypt. He tells us, for example, that each thread used in making a cuirass for King Amasis was composed of three-hundred-and-sixty-five finer ones. Among the many plants used by the Egyptians in connection with their funeral obsequies we may also mention the Squill; while among the fruits, the Date and Fig, the Grape and Pomegranate find a place. In connection with the Fig it is of interest to notice that small images made from the wood of the tree were placed in Egyptian tombs that the soul might have a body into which to migrate. But our subject is a large one, and we must therefore reserve for another paper our study of garden craft in ancient Egypt. *Hilderic Friend.*

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* In an article which I published on this subject in the *Birmingham Daily Post* for January 24, 1923, this word was misprinted "taken." I thank the Editor for permission to make use of that communication.

BULB GARDEN.

CAMASSIAS.

The Camassias are an attractive feature in the garden during May and June, and are well adapted for the flower border or for naturalising on the edge of a wood or shrubbery border. If planted from four inches to six inches deep they may be allowed to remain undisturbed for three or four years.

Their handsome spikes of soft and deep blue flowers are very effective, and produced on stout, graceful racemes from two feet to three feet tall.

To make an effect, Camassias are best planted in groups of from six to twelve or more bulbs, and are equally adapted for sunny or partially shaded situations. They grow well in any fairly good, ordinary soil, in a mixture of loam, leaf mould, and coarse sand.

C. Cusickii is a handsome species growing three feet tall and bearing large, starry flowers of a delightful shade of pale lavender-blue with yellow anthers; C. Leichtlini is a rich violet-blue; and C. L. lutescens has large-creamy-white flowers on stems two feet to three feet tall; C. esculenta, the Quamash, has large, blue flowers on stems one-and-a-half foot tall; C. Fraseri, which is often regarded as synonymous with C. esculenta, has pale blue flowers. *W. Logan.*

HARDY FLOWER BORDER.

VERBASCUM PHOENICEUM.

There are many grand Mulleins, the result of hybridisation, and these are commonly offered in lists of hardy flowers. Less effective in habit, yet of much value, is Verbascum phoeniceum, which forms a good plant for the border, but does not depend for its merit on its boldness of aspect. It is sometimes offered by seedsmen under the name of Verbascum phoeniceum and also as V. phoeniceum hybridum, but I have never been satisfied that the seeds sold by the latter name are from hybrids, as they seem nothing more than colour varieties of V. phoeniceum. Plants raised from a packet of seeds may have a wonderful range of colours and shades, varying from deep purple, through all intermediate tints to white.

In habit V. phoeniceum more resembles V. Wiedmannianum than any other species I know. It forms low tufts of rather large, roughish, green leaves, and there rise above them stems bearing long spikes, which have a lengthy period of bloom. They begin when about a foot or so high, and gradually the inflorescence is prolonged, until the plant may reach a height of about two feet. When it first opens V. phoeniceum hardly needs a stake to it, but as it extends the spikes are better secured to a thin, inconspicuous stick, and rather loosely tied to it.

Old plants may be increased by division, but seeds, sown either out-of-doors or under glass in spring or summer afford a good method of securing a stock. V. phoeniceum flourishes in ordinary garden loam and I have had it quite good in a poor, rather dry border. It begins to bloom in summer and lasts for months in flower. It seems to prefer at least partial sun. *S. Arnott.*

HEUCHERAS.

Heucheras are useful for general border cultivation, for supplying cut flowers, for growing as decorative subjects in pots, and some of the varieties are suitable for the rockery. They thrive in a deep, rich, loamy soil, and young plants seldom fail to flower profusely.

To secure good results the following treatment has proved satisfactory. After flowering the plants should be dug up and divided, selecting strong, single crowns for replanting. A reserve bed may be made which will provide excellent material for producing cut flowers, also plants for growing in pots. Place the plants in their pots during the autumn and if grown under cool conditions they will prove most useful during the following spring.

Heucheras may easily be raised from seeds and some interesting crosses have been made. Heuchera micrantha strain is particularly robust, and seedlings have grown well in soils where H. sanguinea was not a success. The seeds may be sown in boxes of light soil and placed in a shady frame.

There are numerous named varieties of Heucheras, and their nomenclature is somewhat confused. Amongst the most useful for the garden are H. sanguinea Edge Hall variety, with flowers of a soft coral pink, and a very continuous bloomer; H. sanguinea maxima, a strong grower, with flowers of a coral-red; H. sanguinea Pluie de Feu, a plant of very graceful habit, and producing flowers of a fiery red during June; H. brizoides robusta, a neat growing form, with stout, branched stems covered with rose-coloured flowers. These two latter varieties are excellent for supplying cut flowers. H. Zabelliana is a distinct variety, and under good cultivation will produce stems three feet long, furnished with bright rosy pink flowers. H. tiarelloides is a useful hybrid, forming neat tufts of evergreen foliage and stout stems well clothed with clear rose-coloured flowers very early in the spring. *C. Ruse.*

ALPINE GARDEN.

TRILLIUM UNDULATUM

(Syn. T. erythrocarpum).

The Trilliums are mostly inhabitants of North America, but two or three species are also found in Japan and North-eastern Asia. They are a family of woodland plants, the best-known of which is the large, white-flowered T. grandiflorum. In habit they bear a great resemblance to each other, with the characteristic three leaves in a whorl, borne on a stem varying from a few inches to a foot or more in height. From this whorl of leaves is produced the single flower with all the parts in threes. Most of the Trilliums are hardy, and will thrive well in a compost of peat, loam, leaf-soil, and sand. They should be planted in a cool, shady position, protected from the cold spring winds.

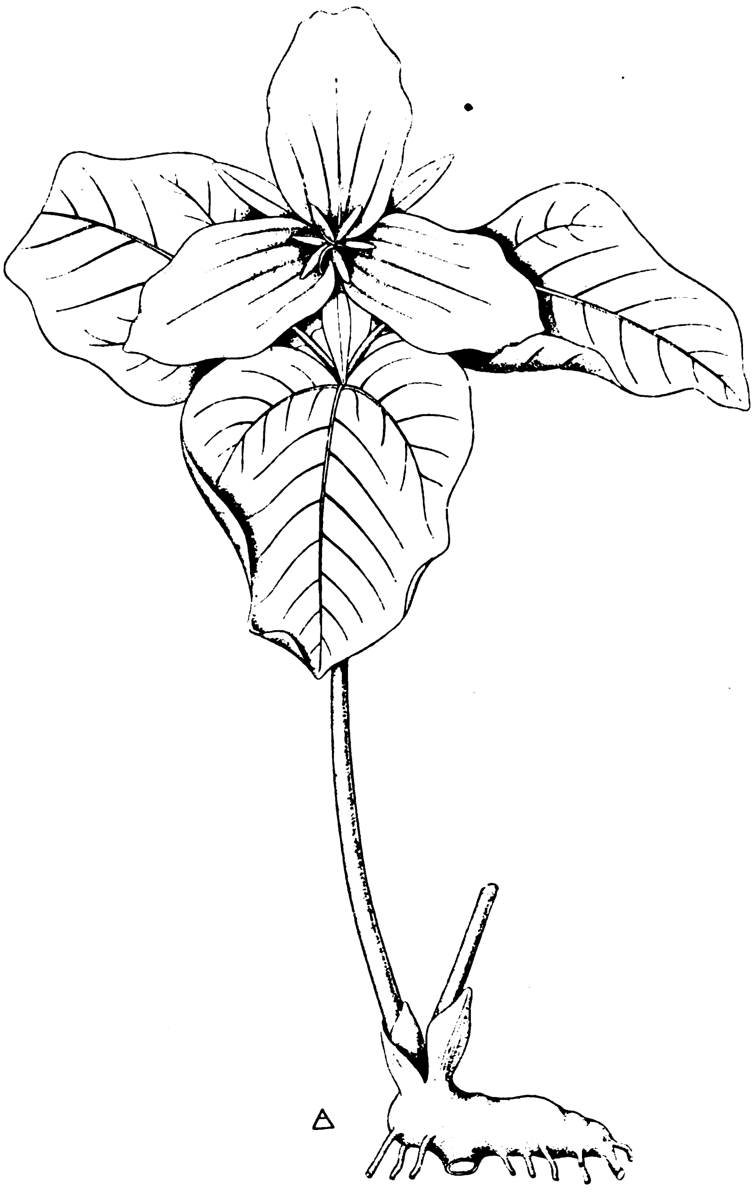

FIG. 196.—TRILLIUM UNDULATUM.

The plant here illustrated, T. undulatum (Fig. 196), is also known in gardens under the name of T. erythrocarpum. It is an exquisite little plant that is a great favourite with all. With attractively spotted, ovate leaves in the usual triple arrangement, the showy white flowers are heavily blotched with crimson near the throat. It is not so easy to manage as the common one, and enjoys a drier condition of the soil. Under genial conditions it makes tufts some eighteen inches high, and produces its solitary stemmed flowers freely. T. undulatum is found growing in woods, from Nova Scotia and Ontaria in the North, to Missouri in the South, ascending to 5,600 ft. elevation in Virginia. It flowers in May and June. *W. I.*

SAPONARIA LUTEA

Some forty years or so ago I was induced by the offer in a catalogue of Saponaria lutea, as a "yellow Soapwort of neat habit," to purchase it. In due course the tufted plant came into bloom, after being eagerly watched.

But the disillusionment was soon complete, for, instead of the golden yellow flowers in great profusion, which fancy had pictured, there appeared a comparatively small number of blooms of a poor yellow, with black anthers, neither attractive nor holding out any promise of improvement as the plant increased in size. This experience I give as a warning to those who might feel tempted to purchase S. lutea.

The plant is neat, with its light green, small foliage, and its two-inch or three-inch stems bearing a closely set head of little starry flowers, but it is lacking in effect, and I can hardly accept the very modified terms of appreciation expressed by Mr. Reginald Farrow. I may add that I cultivated it with success so far as health and flower were concerned, in a flat "pocket" of the rock garden and in full sun in a soil of loam and grit. It is said to be a lime-hater. For those who wish a tufted Saponaria for the rock garden, I would suggest instead of S. lutea the bright pink-flowered S. caespitosa. *S. Arnott.*

ANEMONE PALMATA.

For some years we were unable to get much satisfaction out of this African Anemone, but changing its situation from a dry, free soil to a damper and deeper loam has made all the difference.

The dark-green, fleshy foliage has become more luscious, and several of the plants are putting up the bronzy flower stalks which will shortly bear those wonderful golden-rayed blooms that are the peculiar glory of this splendid subject. If, as Farrer has reminded us, this is "in nature a drought-loving species," our own experience and that of others would seem to suggest that a good, deep-rooting loam which, though well-drained, is never really dry, is what it enjoys. We add a liberal quantity of old leaf-mould to the soil.

A. palmata is a plant long known to cultivation in this country, but it is one which is not seen so often as it deserves to be.

VIOLA CORNUTA.

The star-flowered, Horned Violet of the Pyrenees is one of the oldest species in cultivation. It was introduced in 1776, yet it is still one of the best, taking into consideration not only its peculiar beauty, but ease of culture and general garden value. There is, indeed, probably no other member of the genus which will do so well in almost any soil or situation. That it responds liberally to good treatment is undeniable, yet V. cornuta is so accommodating that it will uncomplainingly prosper in the most meagre of soils and even do tolerably well in the shade and drip of trees or shrubs. It is admirable for covering large areas in the border parts of the rock garden, for broad edgings, and draping unsightly rocky places or old walls. But it is also a first-rate plant for grouping in the front of mixed borders or shrubberies and for beds. Indeed, where a robust grower that will be green all the year round and flower all the summer is needed, V. cornuta is a most satisfying subject.

The long-stemmed, characteristic blossoms of the Horned Violet are well known, but in spite of their sterling merits, one does not in these days often see the older types in cultivation. I refer to that clear, lavender-blue form with very large flowers still cherished in many cottage gardens, and the same plant with pure white flowers is not less admirable and equally robust. These may sometimes seen in masses a yard or more across with quantities of blossoms on eight-inch stems standing erect above the copious foliage.

In addition to the above there are varieties in many shades of bluish-purple deepening to the intense purple of "Clarkson" and deep violet of the well-known "George Wermig," which latter is not to my mind the most attractive if it is to-day the most common in gardens generally.

There is an old golden-leaved, white-flowered form—the only one grown here which may be said to lack the characteristic vigour of the family—and there is, of course, a long list of hybrids (cornuta × tricolor and cornuta × gracilis), as well as numerous pretty hybrid Violas which owe much of their charm to V. cornuta blood.

Curiously enough, V. cornuta seeds but rarely with us, yet its hybrid offspring are often most prolific in seeding, and some of these, notably the charming V. Papilio, will continue to produce seedlings true to colour and form for years. *J. N. Wales.*

PRIMULA FORRESTII.

This fine Primula is considered "difficult," and not without reason. Mr. Forrest found it, I believe, growing in the crevices of rocks, and plants so found are often very chary of giving of their best in our gardens. I have seen it tried in many positions and under varying conditions, and almost came to the conclusion that its charms were very much over-rated; however, at the present time I am enjoying this Primrose at its very best, and this desirable condition has been brought about by unorthodox measures.

Seeds were sown two years ago last winter; the resulting seedlings, a fine germination, were pricked out in a cold frame. As the plants became strong enough, some were planted "here, there, and everywhere," the idea being to give them a good chance under all conceivable circumstances. All these transplanted seedlings failed miserably; soil, situation, aspect, made no difference—they died or lingered.

Of those remaining in the frame, a few died, but several grew freely, of which about a dozen are now crowned by glorious umbels of golden flowers. The plants are of large size; the crowded leaves being surmounted by stout stems, from nine-inches to one-foot in height, and bearing as many "pips" as on a particularly floriferous Polyanthus.

I may state that the soil is shallow, not more than seven-inches or eight-inches deep, and it is placed on a very hard surface, consisting of coal ashes over gravel. The soil consists of good loam, a little peat, and sand.

The leaves of P. Forrestii are a lively green in colour, and possess a faint and very pleasant fragrance; the scape is stout, bearing a many-flowered umbel. The flowers are of a lovely yellow, with orange eyes, the whole making a charming picture, reminiscent of our own Oxslip in glorified form.

After seeing Primula Forrestii in good form, I shall always want to possess it, as one of the best of this beautiful and wonderful race of plants.

It does not like our damp winters, and should, I think, be protected by a frame, or, if growing in the rock-garden, by a sheet of glass.

For colour, P. Forrestii rivals the charms of that grand member of the Candelabra section, P. helodoxa. *Ralph E. Arnold.*

WILD GARDEN.

MELITTUS MELISSOPHYLLUM.

The Bastard Balm is an uncommon native, but one that is by no means rare about many valleys of the European Alps. It is an old garden plant but one that is not often seen nowadays, yet it is a subject of no small merit. In the first place it will thrive in woodland or other shady places, and for the former and the wild garden it is a first-rate subject. It appears to grow quite well in almost any average light soil and, once established, will continue to flourish indefinitely with a minimum of attention.

M. Melissophyllum is a Labiate which sends up stems one foot or more in height furnished with aromatic leaves and producing in spring or early summer pairs of showy blossoms of an unusual size at the leaf axils. These baggy trumpets may be of any tint from flesh pink to white, the latter often being the prevailing colour. But in garden forms the best-known and probably the most attractive form has creamy-white blossoms, each having a bold daub of vivid rose-pink on the lip.

The plant is a true perennial and may be propagated by division after flowering. *J.*

NURSERY NOTES.

IRISES AT MAIDSTONE.

Irises have beautified the gardens of this country for many generations, and they are therefore some of our oldest garden flowers, but it would be paradoxical to describe them as old-fashioned, for at the present time they are very popular, and quite recently a special Iris Society has been formed by enthusiasts, of which Mr. G. N. Bunyard, a member of the famous pomological firm of Messrs. G. Bunyard and Co., Maidstone, is the hon. secretary.

Evidence of the splendid collection of Irises cultivated by this Kentish firm has been apparent at the Chelsea shows during recent years, and it was our pleasure recently to inspect the collections at Maidstone and Allington. In a special nursery, known as Klondyke Nursery, at Allington, there is a very extensive collection of Irises and other hardy flowers, the former including, beside all the best of the more recent introductions, many of the old favourites, and it is proposed to form an extensive Iris border in which a general collection of the older and newer varieties will be included. This border is already partly formed, but it is proposed to re-arrange it, and when completed it will be very educative and highly interesting to those who love these beautiful border flowers.

The genus Iris is one of the most interesting of those cultivated in gardens, for it includes some that flower when the ground is covered with snow, others that herald the approach of spring in the rock garden, and still others that follow until practically the whole season round is covered. But the most glorious members of the family are those which are now known collectively as the Tall Bearded Irises. These have been bred from several species or sub-species, such as I. pallida, I. germanica, and I. squalens, but, like the Daffodil, they have been so intermixed that it is now impossible to tell where one species begins and another ends.

Messrs. Bunyard's collection is especially interesting in that it includes almost every variety of merit, although, of course, some of the very recent novelties not yet in commerce are necessarily not included, but in viewing this fine collection it is obvious that many which are plentiful and fairly cheap are still to be accounted the very best varieties for garden purposes. For instance the old pallida dalmatica in the pale lavender-blue shades is delightful, while Souvenir de Mme. Gaudichau, Prospero, Magnifica, Alcazar, Albert Victor, Eden Philpotts, Miss Jessop, Glamour, and Crusader amongst the early-flowering varieties, and Ambassadeur, Sunset, Opera, Black Prince, Richard II., and Sunshine amongst the latest are all beautiful. These names include a very fine selection of almost all colours found in the tall bearded group of Irises, and if especially dwarf varieties are needed, good sorts are found in Caprice, Archeveque, Tomtit, Mrs. Neubronner, Moliere, Romany, and Tristram. Alcazar, which has lovely violet-purple standards and broad falls of violet veined with bronze is already over, being one of the first to bloom, but the peerless Ambassadeur, with standards of reddish-violet and falls of richest velvety violet colour was still making a grand display, and is one of the handsomest Irises ever raised.

Some of the choicer sorts are cultivated in a small nursery near to the River Medway, which in winter over-flows its banks and floods the land, a condition that seems to suit Irises admirably, for never before have we seen such vigorous plants, indeed, some of the leaves were as big as a cavalry man's sword. This particular piece of land is of great depth, and contains plenty of calcareous matter from a rich deposit of shells from the river, and all who grow Irises know that these plants need a generous amount of lime in their rooting medium. Here were great breadths of such noble Irises as Ambassadeur, Souvenir de Mme. Gaudichau, which has big flowers with almost blue standards and falls of perfect form and large size of a glorious shade of reddish-purple; Aphrodite, a most delicate colour, clear rosy purple and very sweetly scented; Mrs. Chas. Pearson, in which the standards are a delicate mauve and the well-formed falls of rosy mauve; Mme. Schwatz, an immense flower of very soft lavender-blue, and a plant very free-flowering; Opera, with vinous red standards and falls of rich maroon passing to deep violet at the edge, a glorious Iris that may be classed among the dwarf-growing section; Albert Victor, a fine form of the pallida type and very strongly scented; Eden Philpotts, of the Ciengialti × pallida section, very early in flowering, and bearing fine lavender-blue flowers that are set off by a beautiful white and yellow beard; Miss Jessop, another very beautiful variety of the pallida type, with self-coloured flowers of pale violet-blue; and Glamour, a seedling of the Dominion race, very free-flowering, the blooms being richly coloured, the standards heliotrope tinged with yellow, and the falls of a pansy-violet colour, Another that may be mentioned is Rotorua, a variety raised by Mr. Bliss, which is a beautiful lavender-blue self, with slightly darker falls than the standards, which have also a very pretty reticulation of indigo.

In the general collection at the Klondyke Nursery it was interesting to compare the old and modern varieties and to note the advance that has been made in recent years. Here we observed the old variety Mercedes, the true form, for there are several Mercedes in cultivation; the standards are heavily suffused and lined with reddish-brown on white, while the falls have a big white middle area with a central violet line and edge, and are reticulated with purple, the stigmas being chrome-yellow; Ed. Michael, a variety of wine-red colour is worthy of inclusion in any collection, and some might like to include the old Black Prince for its intense purple-black falls; I. Jacquesiana with coppery-crimson standards and deep reddish-purple falls is very distinct; there were also the very old Rolette, of delicate mauve in the standards with falls heavily reticulated with deep purple; Prospero, a tall, vigorous Iris which is especially valuable for planting in the shade where it displays its big flowers to advantage, the standards being of delicate lavender and the broad falls of rich purple; and Eldorado, a flower of fine form with chrome-yellow stigmas and golden reticulated base to the falls, which are suffused with violet-purple.

Many seedlings are grown in Mr. Norman Bunyard's trial ground near to his residence. They are all under numbers, and many of them are of great promise. One that attracted our notice under No. 23/25; it has broad, inarching standards of clear satiny-mauve colour and broad falls of rich violet-purple reticulated at the base with brown, and a pretty golden beard. It is an especially vigorous variety, and we noticed one spike carrying four of its exceptionally large flowers. Another, 25/25, is broad in all its parts, the falls being especially pleasing, for the centre is of a rich plum colour, fading to the edges to lighter violet-purple. The standards are in strong contrast for they are pale lavender. One numbered 1321, a very pale pink, is sweetly scented. It is a very refined bloom, and although not large would probably appeal especially to ladies. Some of the seedlings are older crosses, two years or more, and here again several are of much merit, but it must be remembered that such great success has been obtained by various breeders that it becomes exceedingly difficult to eclipse the best of those already in commerce, and whilst the greater number of Mr. Bunyard's seedlings are good, he wisely refrains from placing any in commerce that do not show some qualities superior to those of existing varieties.

MARKET FRUIT GARDEN.

The Passing of Clean Cultivation.

Fewer growers every year maintain the struggle to keep fruit plantations under clean cultivation unless they are intercropped with bush fruits. So long as there is bush fruit digging and hoeing are justified. When the trees grow large enough to necessitate the grubbing of the under crop, it is doubtful whether clean cultivation pays any longer. To an increasing extent such plantations are being grassed down, or allowed to fall down to grass and the herbage kept down by running pigs or poultry under the trees. Few of the growers who have adopted this plan appear to regret it. They find that the trees do at least as well, and in some cases are much improved by the manuring done by the stock and that the fruit is of better colour, whilst expenses are reduced and often an additional profit secured. It remains to be seen how some of the orchards trampled hard by poultry will stand a prolonged drought. It is then that cultivation will be missed if it ever is. In a wet season a grass orchard certainly does best. The alternative of "sod mulch" or "sod strip" treatment has not been adopted to any extent. Yet in America it is recognised as being more suitable for dry districts than any method of grazing. Some of my land has been under this treatment for a number of years, and I think, taking one season with another, it has given me better results than clean cultivation. At this time of year the plantations appear neglected, but when the grass has been cut they look very well. I have even some Lane's Prince Albert trees of bush form under sod mulch, and they have made more growth since the land was grassed down than they ever did before, with the help of mineral fertilizers only. The effect of nitrogenous manures on trees under sod mulch is particularly striking. *Market Grower.*

HARDY FRUIT GARDEN.

BARK SLITTING.

Market Grower's note on bark slitting (p. 340) is of much interest. I have adopted this method on fruit trees, chiefly standards, which had been grafted or budded in cases where the stock had failed to grow, or swell, in proportion to the scion.

Ornamental trees, which had been grafted on stocks six feet or eight feet in height, were treated in this way with good results. The best success followed naturally in the case of the youngest trees, which quickly responded, the stems swelling and the tops making free growth. Most noticeable were some trees of Cerasus. Good varieties had been "worked" on the stocks at a height of about six feet. Some of the trees were growing freely while others were much stunted. Slitting the bark was practised and the effect was most noticeable after the second season, when both stock and head responded and growth was satisfactory.

I have sometimes hesitated before carrying out this practice on fruit trees, such as Peaches, which generally make sufficient growth even when the stock appears "bark-bound," but in some cases it has proved beneficial. With these trees the slit has been made, so far as possible, on the wall side of the stem, and the slit painted over with a mixture of clay and cow manure. The work was done early in the spring. If thought advisable the wounds were painted over again during the summer, but the slits soon heal over, and the risks are small; generally the wound is healed before winter, so that there is little risk of the opening providing a resting place for spores of injurious fungi, or insects. *C. Ruse.*

APPLES AND PLUMS IN SUFFOLK.

My county as a whole is not as notable for plantations and orchards as its neighbours which go to constitute the area within the confines of East Anglia. Nevertheless, there are considerable numbers, and some of them are admirably managed; blossoming of the Apples brought us a feast of exquisite beauty which we do not enjoy annually, indeed, not even biennially. It seemed as though every tree and every variety was doing its floral duty in a most bountiful manner; during the comparatively excellent weather of full blossom bees and other insects laboured assiduously, let us hope to the very real advantage of growers and consumers alike. If quantity of flowers may be accepted as a criterion—and it is by most people, including not a few who ought to know better—we shall have a bumper Apple crop which will remind us of our best, if it does not fully equal it. As was expected, by those who think, Plums are falling in thousands. This is a fact which need by no means be deplored, for if all had remained to finish there would have been countless more thousands, but very few real Plums, delicious, cooked, or raw as the case may be. From the gardener's point of view the finest possible quality must overwhelm mere quantity, and it is more than probable that it will pay the commercial grower in the long run. That end will be brought nearer still by the thousands of other fruits that will still come down. At present it is scarcely possible to say that any individuals are taking the lead in swelling and until then the wisest men will not prophecy either for or against. Hope is, however, high. *West Suffolk.*

APPLE SCAB.

It is evident that fruit growers are greatly alarmed by the rapidity with which the scab disease of Apples has spread in recent years. I believe the unusual degree of humidity experienced since 1921 may be responsible for the firm hold which Apple scab has obtained.

Most gardeners are aware that the disease is caused by a parasitic fungus (Venturia inequalis), belonging to the large group known as Pyrenomycetes, but it would be far better if they knew the three stages of the life-cycle equally well.

The cracked, deformed fruits and the ruptured bark of the twigs proclaim that they are Scab-ridden. These are evidences of the latest stages of the malady, whereas the early stage is now in evidence and may be seen on the leaves of Apple trees all over the country. The symptoms are the appearance of small, round, dark-coloured spots. If left to pursue an independent course the lesions will spread and the fungus form spores which will be conveyed to the young fruit and shoots. Obviously it is the duty of every grower, if time will permit, to attack and defeat the disease in the first stage of its existence.

I have proved that this can be done by a test carried out a fortnight ago. My garden, in the county of Glamorgan, is an early one, even in a county which is earlier than most. An outbreak of Apple scab was plainly evident on May 20 and I decided to spray with lime-sulphur (summer strength), and Bordeaux mixture (half strength). A good knapsack sprayer, fitted with a six feet Bamboo lance, was used. I selected the evenings for spraying, because I felt that a slowly evaporating liquid would have a better chance to attain the desired object. Both specifics were effective and the trees are now clear of Apple scab. The standard strengths of Bordeaux mixture and lime sulphur are recognised, I believe, but in order to prevent misunderstanding, I give the formulae used, and the belief that they were half-strength:—Bordeaux mixture—freshly burnt quicklime 4 lbs., copper-sulphate 6 lbs., water 50 gallons; lime-sulphur—lime-sulphur 3 pints, water 3 gallons. *Geo. H. Copley, N.D.H.*

VEGETABLE GARDEN.

WHITE-FLOWERED SAVOY.

I have read with interest Mr. S. B. Dick's note entitled, "White-flowered Savoy" (p. 402). I am not acquainted with the white-flowered variety of Milan Cabbage, but I have often noticed in plantations of Milan Cabbage (particularly in Verus or Aubervilliers) several stems bearing white flowers. I find in my cultural notes under date April 4, 1920, a mention of having found in a plantation of Milan Cabbage a specimen with yellow calyx and white corolla. When planted separately for purposes of observation, the Cabbage, unfortunately, did nothing, the flowers having been eaten by insects. In the plantation mentioned, in an area of about twenty-five acres, there were about four square feet with white flowers. Among Cabus Cabbages, the Pisa Cabbage bears white flowers with occasional stems of yellow ones; among Broccoli the Mammoth variety presents the same peculiarity. If these few notes are of service to Mr. Dicks, I shall be very glad. *E. Meunissier, Paris.*

PUBLIC PARKS AND GARDENS.

The Town Council of Bexhill proposes to apply for sanction to borrow £3,400 for the purchase of land at Sidley for a recreation ground.

Cheltenham Town Council has under consideration a scheme estimated to cost £10,000, for the diversion of the Chelt between Barrett's Mill and Keynsham Road, also the formation of a shrubbery and ornamental walk and pleasure ground, with boating pond for children.

On May 30, two small public parks in Scotland were opened with appropriate ceremonies. That at Stonehouse is the gift of Councillor Alexander Hamilton, Kidderminster, who formally declared the park open. A fountain has also been erected by Mr. Hamilton in memory of his late mother, and this was unveiled by Mrs. Hamilton. Mr. T. Wilson, J.P., Chairman of Stonehouse Parish Council, presided, and expressed the high appreciation of the community of the generous gift of the donor.

The other park is for the inhabitants of Tullibody and Cambus and Alloa. It was opened by Major Tullis, Baingle Brae, Tullibody, and Mr. J. Kettrick, Chairman of the Landward Committee of the Alloa Parish Council, presided. The park is eight acres in extent, and is admirably suited for the purpose.

The Urban District Council of Kettering has received sanction to borrow £1,800 for the purchase of Geary's Field, near Rothwell Road, for a public pleasure ground.

The extent to which games are practised in the public parks of Glasgow was indicated in a report by the Director that embodied the following interesting figures:—3,830 match games of football and 225 match games of hockey were played in the past season; the number of golfers on the five Corporation courses increased from 217,642 to 226,624 and the revenue from £4,962 to £5,521; tennis was played on seventy-nine courts and the popularity of the pastime was reflected by the number of players, which increased from 9,642 to 19,517. The Parks Committee have been requested by the local cricket league to provide more cricket pitches and permission has been given to play motor cycle football on Kennyhill grounds on the 27th inst. A proposal is also being considered to set apart spaces in each of the parks for games for girls.

HOME CORRESPONDENCE.

Regelio-cyclus Irises.—I fear the note about the above Irises, from Sudbury (p. 391), needs an addendum, lest it should be inferred by those who have never grown these most refined-looking flowers that all that need be done is to plant the rhizomes at the foot of a south wall or in "a warm border," and protect them during "late autumn" (and I presume also all the winter) with a covering of ashes. Twice I have had these Irises in my cold Midland garden. On each occasion I have found that so long as I carefully observed the printed directions that van Tubergen's sent with them I was very successful and had a nice lot of bloom When, however, they were planted out and had to look after themselves, without being taken up, they were miserable failures, although in one case their position was in a narrow border at the foot of a south wall, and in the other a warm bed under a wall facing west. At my first attempt I kept careful records of each variety, and found that I had more flowers when they bloomed for the second time than the first, when they had come direct from Mr. van Tubergen. My treatment obviously suited them. The only difference I made from what he prescribed was that I used small glass lights to cover the bed during the winter, instead of branches. Annual lifting, a thorough drying and baking in the greenhouse, shallow October planting in well-drained light soil, winter protection, and plenty of water in spring when they are making growth are the main essentials, I found, for success. The lights were taken off before the plants bloomed. The bulbs were lifted in July, *baked in the sun, and then kept in a warm place* till they were planted in October. *Joseph Jacob.*

An Operation on a Standard Rose—To claim that a particular thing in gardening is unique is easy, but to substantiate that claim when called upon to do so by a cold-blooded sceptic is a different problem. Here is an occurrence in the garden of Monk's Close, Woolpit, Bury St. Edmunds, the residence of Dr. E. C. Hardwicke, which, while it may neither create a record nor establish a precedent, is, one feels sure, so far unusual as to justify a permanent place in the pages of *The Gardeners' Chronicle*. During some lopping on May 25 the incorrect falling of a branch resulted in the head of a healthy standard of Mrs. Henry Morse Rose being broken and attached to the stem only by a shred of bark scarcely half-an-inch wide, and about two feet above the ground. It is, perhaps, quite safe to say that ninety-nine growers out of a hundred would have placed the head on the rubbish heap without wasting a thought on a useless thing. Not so my medical friend, however. It may be presumed he thought that as a man's leg can be repaired successfully when it is broken there is no logical reason why a standard Rose's leg should not be mended too, and he proceeded to operate. The ends of the fracture were brought neatly and perfectly intimately together, the torn bark was joined up at the broken edges with scrupulous care; splints and bandages, plus a vaselene dressing, followed. No nurses awaited the smile or frown of the surgeon and no anaesthetic was administered. Let it be confessed that I smiled inwardly and looked to the imminent humiliation of the villain who painted my countenance to resemble the physiognomy of a North American Indian (and gloried in it, which is infinitely worse) some weeks ago. The artistic embellishment of my features was a surgical success, and I begin to wonder now whether the treatment of the Rose is destined to be a success too. To-day the plant is in flower, to all appearances in sound health, and making vigorous growth, and it is exactly twelve days since the accident and operation. I purpose to record progress some months hence, sooner if it leads to death. In the meantime it will be interesting to learn whether any reader of the *The Gardeners' Chronicle* has proceeded similarly in parallel circumstances. I have not previously heard, or ever read, of such a thing. *W.*

Rhododendron George Hardy (see p. 400).—This Himalayan hybrid raised by Mangles and sent out some twenty years ago by Messrs. John Waterer and Sons, is one of the best of the May-flowering varieties. In appearance it resembles the variety White Pearl and flowers a week or two before Pink Pearl. A hybrid between R. Griffithianum and a garden hybrid, as mentioned by Mr. J. G. Millais in *Rhododendrons* "it stands full sun in the exposed garden better than any of the other hybrids of this strain." The unopened buds are pink, and the white, open flowers are suffused with pink at the edges. The large, conical truss "sits" well on the fine, dark foliage. It early attracted the notice of the hybridist. Its progeny includes the Dutch raised variety, Mrs. Lindsay Smith, which is considered by many to be the best white hardy Rhododendron. *Fred W. Jeffery.*

Apple Leaf Scorch.—The correspondence on this subject is becoming of great interest, and nothing but good can result from it. Still, one would like to see private gardeners taking part in it. The private gardener treats his trees as individuals, whereas the market grower must, of necessity, make the field the unit. As the same area may contain various kinds, what may prevent trouble in one case, may, as the evidence of the correspondence tends to show, actually induce it in another. *Market Grower* makes a valuable contribution in the issue for June 6. Here we have, for the first time, definite information of scorch on trees in the field, where manuring has been generous and ascertainable over several years. The manuring is certainly very generous compared to mine. For the information of Dr. Durham (see his letter in the issue of May 30), I may state that the manure I used was horse manure and pig dung, chiefly the latter, and was not too well rotted, being only a few months old. The most I could spare each year was a barrow load to four bush trees. Trees looking in good condition were passed over. It will be seen that there is a great difference between my manuring and *Market Growers'*. Whether he over-manured or not I cannot state. I certainly did not because I could not get sufficient manure. Since my previous letter I have heard from Mr. H. R. Briton-Jones of Long Ashton, and he has been good enough to inform me that he agrees with many of my points, and that there is a relationship between leaf scorch and die-back. He has, however, a paper on the subject in the press (*Journ. of Pomology*), and I hope that *The Gardeners' Chronicle* will be able, besides allowing space for further notes on this subject, to reprint at least a summary of this paper. To give an idea of the many points which require clearing up, I sent Mr. Briton-Jones a list of varieties placed in order according to their proneness to scorch. My first sort was Newton Wonder, followed by Beauty of Bath, with Cox's Orange Pippin seventh. Mr. Briton-Jones finds Cox's Orange Pippin a bad scorch subject, whereas Newton Wonder is not. *Market Grower*, apparently, puts Beauty of Bath first and Cox's Orange Pippin second. Evidently varieties differ in different areas, but why should they? I had scorch on trees in a grassed area; in fact, two or three big trees were cut out, as die-back was so severe. This part of the orchard was very little used by the pigs and chickens quartered there. I found that confining the pigs to that area for a whole winter made a wonderful difference to the trees, and I believe scorch is finished there. There was no further die-back *E. Brown, Hillside, Doddington, Sittingbourne, Kent.*

Stephanotis Seedlings.—In reply to Mr. C. May's inquiry (p. 402) respecting Stephanotis seedlings, I remember that the late Mr. Thomas H. Green raised many seedlings from his own plants, at Draycot Gardens, Wilts, and he was, I believe, the first to do so. During the time I was an improver under him I had the pleasure of seeing his first seedlings flower. The following year other seedlings were raised from fruits which afforded seeds on the same plant. Stephanotis and Gardenias were extensively grown at Draycot at that time. Mr. Green told me the plant from which he saved his seeds was planted by him twenty years previous to its fruiting. In order to prolong the flowering period of his plants, some were kept in a cool house, and it was from one of these he obtained his seeds. I have never seen seed-pods on the plants grown in the stove-houses. When leaving Draycot I well remember seeing several fruits hanging from the plants in the cool-house, and I have no doubt other seedlings were raised after I left. I congratulate Mr. May on his success. Mr. Green told me he failed several times before becoming successful. The first plants raised were five years old before they flowered. *G. H. Hill, Caldecote Gardens, Bushey Heath.*

——In answer to Mr. May's inquiry in *Gard. Chron.* of June 6, I remember that at the Palace Gardens, Wells, Somerset, in the seventies, we had Stephanotis plants which fruited and ripened seeds, and several seeds germinated. I remember the Bishop, whose attention had been called to the fruit being very interested in the results. I have not seen any fruits since I left those gardens in 1878, and I cannot remember any mention of seedlings previous to Mr. May's inquiry. *A. E. Gooden, Spratton, Northants.*

Prunus serrulata Sekiyama. — Had your correspondent *J. F.* (p. 399) referred to my paper on "Japanese Cherries," recently published in the *Journal* of the Royal Horticultural Society (Vol. L., part I., 1925), he would have seen that the mis-named Hisakura of nursery lists is synonymous with the variety he describes as P. s. sekiyama. As pointed out in the above-quoted paper, the name Hisakura is particularly unfortunate in view of the fact that it is applied by Japanese botanists to a distinct, *single* variety. Many names have been manufactured for this beautiful Cherry, and it is possible to acquire it under any of the following:—Kanzan (which is its correct vernacular name, according to Prof. Miyoshi, of the Tokyo Botanic Gardens); Ohnanden, Rubra Nova, Hizakura, Horinji, and "New Red." The coining of new names may be a more or less harmless amusement, but to transfer one already occupied to a totally distinct variety is a pernicious practice that should be strongly discouraged, for it is liable to lead to almost endless confusion. *Collingwood Ingram.*

The Yellow Florist's Tulip.—On page 412 we read in reference to a deep yellow Cottage Tulip, "which in colour leaves Walter T. Ware behind, and probably matches that shapely florist's variety in form." It should read "which in colour leaves Walter T. Ware behind, and probably matches the shapely florist's variety in shade." Walter T. Ware is not a florist's Tulip. The "shapely florist's variety" is the one and only yellow florist's Tulip that has up to now been raised.. It is exceedingly scarce, and doubtless only a handful of growers know of its existence. I believe it to be the richest and deepest of all yellow Tulips. It is certainly some shades deeper than Walter T. Ware. I believe it has never been named. It is always spoken of as "the Yellow Florist's" Tulip. *Joseph Jacob.*

Hay Fever.—This distressing complaint is affecting some of my acquaintances very severely this season; it would be a boon if one who knows of a remedy would give the information to your readers. *T.*

SOCIETIES.

GRAND YORKSHIRE FLOWER SHOW AND GALA.

June 17, 18, and 19.—This is the sixty-third year in which a Grand Flower Show and Gala has been held in the City of York, and the display on this occasion was one of the best of the long series. In regard to colour we do not remember a York Show in which there were such brilliant effects as on the above dates, and our personal experience extends backwards for over thirty years without a break.

Two years ago the Gala authorities had to leave the old site at Bootham Park, close to Bootham Bar, and so great were the difficulties which arose in connection with the provision of a new site that they appeared to be insurmountable. At last, however, the football ground at Fulford, well outside the city, was secured, and there the show was held last year. It was a good show, but not so good as many of its predecessors, and owing to the distance of the site from the centre of the city, the attendance showed a great falling off, and consequently the function was not a financial success.

It became necessary to review the situation. This was done, and eventually a new Council was formed, including some of the old members, among them the veteran Mr. C. Hodgson, and several members of the Corporation. Moreover, the responsible persons formed themselves into a limited liability company, under the title of the Grand Yorkshire Flower Show and Gala Association, Ltd., with Mr. H. L. Swift as Chairman, Mr. Arthur Anderson as Secretary, and the Most Hon. the Marquess of Normanby, D.L., as President. Thus it came about that while we missed a few old friends we made the acquaintance of new members of the Floral Committee of the Gala, including Mr. Stanley R. Slack, the Sheriff of York, and Mr. G. Y. Johnson, the Chairman of this Committee, both of whom have worked hard to make the present show a success.

This closer association of the Gala authorities with the Corporation of the City of York, should be all to the good, as it throws a greater responsibility upon the City, a responsibility it ought to bear on behalf of what has become not only a great Yorkshire function but a national one also, seeing that exhibitors come from the far south and west, and northward from across the border. This closer association immediately bore fruit, as the Corporation allowed the gala to be held at Knavesmire, at a very nominal figure. Knavesmire is a great open space just outside the city, and seems in all respects to be a suitable site. The York racecourse is at Knavesmire, and trams run past the entrance, which is five minutes distant from the railway station. The Gala site had to be fenced off for the occasion and thus an extra expense was incurred. Further, the tent which did duty at Bootham Park (a large part of the great tent in which the International Show was housed at Chelsea in 1912) could not be used in the absence of footings for the supporting pillars, consequently three big marquees were used and in these a wonderfully fine show was held. The weather was kind on the opening day and, we hope, on the other days also; we also hope the attendance will be sufficient to make the Gala a financial success, for upon such success the future of the Gala depends. If York City and York Shire cannot combine to keep the Gala going it will be a thousand pities and bad for horticulture in the north of England.

As to the show itself, hardy flowers were the outstanding feature and the colours they provided were dazzling. Orchids, rock gardens, Roses, decorative groups, floral designs, and plants were other good items, but the glory of the plant section has long since departed, and the giant specimen Pelargoniums, once the pride of York Gala, are no longer seen. Competition is not so strong as formerly, but any deficiency in this respect is fully made up by the number, extent, and beauty of the trade displays.

Orchids.

Eight classes were provided for Orchids, and most of these were well filled. The outstanding prize winners were Messrs. J. Cypher and Sons, Cheltenham, and J. Macartney, Esq., Bolton, Lancashire. The former won the premier award for a table of Orchids arranged for effect on a table space twelve feet by five feet, cut blooms being allowed as well as plants. The Cheltenham firm contributed a fine display in which Laelio-Cattleyas, Odontoglossums, and Odontiodas were largely employed, together with handsome examples of Thunia Marshalliana, Dendrobium Dalhouseanum, Cypripedium callosum, Epidendrum vitellinum majus, and Miltonias. Second, Mr. J. Macartney, and third Messrs. A. J. Keeling and Sons.

The best dozen Orchids were those staged by Messrs. J. Cypher and Sons, and their set included Laelio-Cattleya Canhamiana superba, a fine plant of Dendrobium chrysotoxum, Cypripedium callosum Sanderae, finely flowered, Thunia Marshalliana, L.-C. Aphrodite, and L.-C. Dominiana. Second, Mr. J. Macartney.

In the class for half-a-dozen Orchids, in bloom, the Cheltenham firm continued its success, winning with good plants of Laelio-Cattleya Canhamiana, Brasso-Cattleya Veitchii, Thunia Marshalliana, Odontoglossom amabile, and Cypripedium bellatulum; second, Mr. J. Macartney, and third, Messrs. A. J. Keeling and Sons.

Messrs. A. J. Keeling and Sons beat Messrs. J. Cypher and Sons for three Orchids, showing Odontioda Madeline, Miltonia Bleuana, and Sophro-Laelio-Cattleya Helius in good form; the Cheltenham firm relying on Laelia-Cattleya Canhamiana, L.-C. Aphrodite, and Thunia Marshalliana. L.-C. Canhamiana superba won first prize for Messrs. J. Cypher and Sons in the class for one specimen Orchid; Messrs. A. J. Keeling and Sons coming second with Odontioda Colinge var. gloriosa.

In the amateurs' classes for six and for three Orchids respectively, Mr. J. Macartney (gr. Mr. C. F. Potts) won the premier awards, and some of his best plants were Odontioda Coronation, Brasso-Cattleya Veitchii, Miltonia vexillaria, and Odontoglossum crispum. Mr. Macartney also had the best Orchid in this section—a good Odontoglossum ardentissimum.

Roses.

For such an early date Roses were shown more freely and in better condition than usual. We remember occasions when the Rose section at York has been very fine, but these occasions have been few and far between and due to an unusually early season.

Mr. Elisha J. Hicks, Hurst, had the best collection of Roses, arranged on the ground on a space six feet by four feet. He had a bright exhibit in which were pillars of cut blooms of such attractive varieties as Madame Butterfly, Moonlight, Diabolo, Jules Levanches, K. of K., and Mrs. H. Stevens. Mr. George Prince, Longworth, won the second prize, and showed capital blooms of Victoria, Allen Chandler, Vanity, and Madame Herriot. Mr. George Prince led in the class for a decorative table of Roses, the space allowed being nine feet by four feet. He had pillars of blooms of Emma Wright, Irish Fireflame, K. of K., Ophelia, Mabel Morse, Rosa haemispherica, and sheaves of Lady Glen Colin, and Lord Charlemont, and a central basket of the bright Lady Inchiquin.

Mr. E. J. Hicks won the premier award of £8, offered for the best collection of seventy-two blooms in not fewer than three dozen varieties. He had a good set, and some of the blooms were of very fine quality. A few of the leading varieties were Mabel Morse, Felix Brix, Lady Craig, H. V. Machin, Mrs. J. Heath, Mrs. Foley Hobbs, Arthur Cook, and Pax Labor. Second, Messrs. Jarman and Co.; third, Mr. Henry Drew.

For four dozen blooms in not fewer than two dozen varieties, Mr. E. J. Hicks led with Mrs. E. J. Hicks, Lady Dixon Hartland, America, and Sovereign as his best specimens; second, Mr. George Prince; third, Mr. H. Drew.

Mr. Ernest Hicks, Wallingford, led in the class for three dozen Roses and had capital flowers of Bessie Chaplin, Mrs. G. F. Hudson and Lemon Pillar; second, Mr. G. Prince; third, Mr. E. J. Hicks; fourth, Mr. H. Drew. Mr. Ernest Hicks was also the most successful competitor in the class for twenty-four Rose blooms, distinct, and here he showed excellent examples of Admiration, Mrs. H. Bowles, Bessie Chaplin and Mrs. Lamplough; second, Mr. E. J. Hicks; third, Mr. H. Drew.

Mr. Ernest Hicks was also first prize winner in the class for eighteen Roses, and was followed in order by Mr. E. J. Hicks and Mr. Drew. For a dozen Roses Mr. George Prince led, showing fine flowers of Lady Charlemont, Lemon Pillar and Sunburst; second, Mr. Ernest Hicks; and third, Mr. E. J. Hicks.

In the amateurs' class for a dozen blooms the two leading prize winners were Mr. G. W. Reader, Naburn, and Mr. W. Hutchinson, Kirby Moorside.

Hardy Flowers.

For a collection of hardy perennials, including Lilium and other hardy bulbous plants, but excluding Roses and shrubs, arranged on a space of three-hundred-and-fifty square feet, the premier award of £15 was won by Messrs. Harkness and Son, Bedale, with a superb oval group of brilliant colouring; indeed the three exhibits in this class, together with some other hardy flower classes, provided a feast of colour we have, rarely seen excelled at a show. Messrs. Harkness and Son had magnificent Oriental Poppies, a central grouping of Eremurus and Lupins, Irises in great variety Pyrethrums, Heucheras, Gaillardias, Aquilegias, Geums and Violas. Second prize was awarded to Messrs. G. Gibson and Co., Leeming Bar, for a great lot of Oriental Poppies, Lupins, Verbascums, Hemerocallis, etc., not quite so carefully arranged as in the premier group, but nevertheless very fine and brilliant; Messrs. Longster and Sons, third.

Messrs. Harkness and Son were the most successful competitors in the class for a collection of hardy flowers arranged on a ground space of eighteen feet by seven feet. Here again they had a fine display of Oriental Poppies in salmon, scarlet and flame shades, tall Verbascums, Lupins in variety, Pyrethrums and Lavatera Olbia; second Messrs. Gibson and Co.

Mr. W. Hutchinson, Kirby Moorside, won premier place in the class for a dozen bunches of hardy flowers, showing fine sets of Lychnis Viscaria splendens, Heuchera, Lupins and Oriental Poppies; second Mr. H. Tunstall, Ouseburn; third Mr. R. Kettlewell, Bedale; fourth, Mr. J. Jubb, Sykehouse.

GROUPS.

In the group class, Messrs. J. Cypher and Sons won the leading prize with a pleasing exhibit arranged with their usual artistry. It consisted of well grown plants so arranged as to display their full beauty and yet produce an elegant effect. Codiaeums, Dracaenas, Aralias, Palms, Bamboos, Liliums, Begonias and various Orchids were all utilised to great advantage. Mr. W. A. Holmes won second place, and Mr. J. M. Petch, third.

In another group class, space allowed three hundred square feet, Mr. Holmes led with a pleasing effort, followed by Mr. J. M. Petch; both showed Codiaeums in good colour, Palms and a few Orchids.

Mr. Pickering, Clifton, was the only exhibitor in the class for an "Ornamental Rock Work," he showed a small pool with Water Lilies, and rock work planted with Hypericums, small Campanulas and Violas, and with Irises and Spiraeas near the water and Pines and Maples on the higher parts.

Mr. J. W. Winn, Moorgate, was the only exhibitor of a rock garden arranged on a space thirty feet by twelve feet. He had a simple design but the planting seemed to need more colour. Primula helodoxa, Saxifragas and Mimulas were a few of the chief plants used.

Several classes were provided for small groups of specified plants, and here the chief prize winners were Mr. Hirst, for tuberous-rooted Begonias; Messrs. Padgett and Watson, Ousegate, for Gloxinias; Mrs. St. Maur Palmes, Lingcroft, for Calceolarias; Messrs. Padgett and Watson for Carnations; and Messrs. Blackmore and Langdon, for a large group of Begonias, open class.

Floral Decorations.

Mr. Sydney Warren led in the class for a table decoration with an arrangement of Odontoglossums, yellow Roses and blush Carnations; second Mr. F. H. Ward. The latter had the best hand-basket of flowers, a bold design in blush and crimson Carnations; second Mr. C. E. Simpson. Mr. Elisha J. Hicks showed the best bowl of Roses, using the variety Ophelia; this variety was also used by Mr. Ward who won second prize; Mr. T. M. Petch third. Crimson and blush Carnations were used by Mr. Ward in his first prize bowl of flowers, and Mr. S. Warren came second with a bright arrangement of Primulinus varieties of Gladiolus and Iceland Poppies.

Mr. C. E. Simpson was the most successful competitor in the class for a bride's bouquet, winning with a pleasing design composed of white Odontoglossums; second, Mr. Ward, with an arrangement of white Carnations. The best bridesmaid's bouquet was made of purple Cattleyas and white Carnations by Mr. C. E. Simpson; second, Mr. Ward, with Cattleyas and Odontoglossums. For a pair of ball bouquets the leading award was won by Mr. Ward, with one design in scarlet Sweet Peas, and the other in white and heliotrope Carnations. Mr. Ward was equally successful in the class for two hand bouquets, one of yellow and the other of heliotrope Carnations. For one bouquet Mr. Ward secured first prize with Orchids and Carnations, and Mr. C. E. Simpson won second prize with Roses. Mr. Ward and Mr. Warren were first and second respectively in the decorated dining table class, but there was nothing original in either case. Fruits as well as flowers were admitted.

Fruit.

J. Brennand, Esq. (gr. Mr. J. Hathaway), Baldersly Park, Thirsk, was awarded first prize for a collection of fruit, winning with good examples of Foster's Seedling Grapes, Cardinal Nectarines, Peregrine Peaches, and Emerald Gem Melons. Major Dent, Ribston Park, Wetherby, beat Mr. Brennand for Peaches, each showing the variety Peregrine.

For Black Hamburgh Grapes the awards were made in favour of the Earl of Feversham (gr. Mr. W. Williams), Duncombe Park, and Mr. J. Brennand respectively. For white Grapes Mr. Brennand scored with Foster's Seedling. This competitor also had the best Nectarines—Cardinal; the Earl of Feversham coming second with Pineapple.

Non-Competitive.

The non-competitive exhibits were unusually good and of diverse kinds. Messrs. Sutton and Sons had a superb lot of Antirrhinums, the spikes being of fine colour and quality and splendidly arranged in bold masses. The commonly expressed opinion, with which we concur, was that never before had such brilliant colouring been seen in an exhibit of Sweet Peas as in the one arranged by Messrs. Robert Bolton and Sons. Messrs. T. Rivers and Sons contributed one of their fine groups of well cropped fruit trees in pots; Peaches, Nectarines and Figs being notably good. Mr. H. J. Jones excelled with Hydrangeas and his large group included all the newer and brilliantly-coloured varieties. Messrs. Backhouse and Son, York, were extensive exhibitors and their rock and water garden was a centre of interest and admiration.

Another outstanding exhibit was the group of Ixora coccinea from Lady Nunburnholme (gr. Mr. W. Kitchen), Water Priory, and to this *The Gardeners' Chronicle* Medal, offered for the best amateur exhibit, was awarded. The following is the list of awards made to non-competitive displays:—

Large Gold Medal.—To Messrs. Sutton and Sons; Messrs. Robt. Bolton and Sons; Messrs. Backhouse and Sons; Mr. H. J. Jones, and Messrs. T. Rivers and Sons.

Gold Medal.—To Messrs. Toogood and Sons, flowers and vegetables; Messrs. C. E. Simpson and Sons, fruit; Mr. C. Engelmann, Carnations; Messrs. Alex Dickson and Sons (2), for Roses and for Sweet Peas; Messrs. Dobbie and Co., Sweet Peas; Messrs. J. Peed and Sons, Caladiums, Hydrangeas, etc.; Messrs. Mansell and Hatcher, Orchids; Messrs. E. Webb and Sons, greenhouse plants and flowers; Messrs. Kent and Brydon, hardy flowers; Messrs. Kelway and Son, Paeonies and Delphiniums; and Lady Nunburnholme, Ixoras.

Silver-Gilt Medal.—To Messrs. R. H. Bath, Paeonies; Messrs. Blackmore and Langdon, Delphiniums; Messrs. M. Prichard and Sons, alpines; Messrs. Backhouse and Son, alpines; Messrs. W. H. Simpson, Antirrhinums, and Messrs. W. and J. Brown, Roses.

Silver Medal.—To Messrs. Jarman and Co., hardy flowers; Messrs. Maxwell and Beale, hardy flowers; Messrs. Lowe and Gibson, hardy flowers; Mr. F. G. Wood, hardy flowers; Messrs. Bakers, hardy flowers; Mr. H. G. Longford, Iris garden; Messrs. Storrie and Storrie, greenhouse plants; Mr. G. W. Miller, hardy flowers; Mr. Henry Eckford, Sweet Peas; Mr. V. C. Vickers (gr. Mr. Watkins), Aquilegias and fruits; Mr. R. V. Rogers (2), alpines and Violas; Mr. C. H. Herbert, Pinks; Mr. A. H. Todd, Violas; Messrs. J. Cheal and Sons, Dahlias; and Mr. G. Burch, Roses.

Small Silver Medal.—To Messrs. Reamsbottom, Anemones; and Messrs. Skelton and Kirby, alpines.

DEESIDE (ABERDEENSHIRE) FIELD CLUB.

The members of this Club, numbering over two hundred, had another highly successful outing on Saturday, the 13th inst., the venue being the Royal Forest of Ballochbuie and the Falls of Garawalt, and on the homeward journey a visit was paid to Invercauld House, one of the most beautifully situated mansions on Royal Deeside. Entraining at Aberdeen the party proceeded to Ballater, where a fleet of cars and coaches was in waiting. These conveyed the visitors thirteen miles up the valley to the old bridge over the Dee built by General Wade, who long years ago did so much for northern Scotland in the way of roadmaking. From thence a walk was taken through the Royal forest of Ballochbuie. Passing along the most exquisitely beautiful woodland paths, the party saw great stretches of real primeval forest, containing grand examples of old Pines, their wonderfully patterned boles evoking much admiration. The famous Falls of Garawalt was the first halting place, the sylvan setting through which the waters come rumbling and tumbling over rocks in successive bounds, reminding one of a flight of steps, being greatly admired. From this point could be seen Lochnagar and Beinn a'Bhuird, on which great patches of snow were visible near their tops.

The party lingered long here, and then rejoined the conveyances which took them to Invercauld House, where a warm welcome was awaiting them from Lieut.-Col. A. H. Farquharson, of Invercauld. Here tea was served upon the lawn, and right heartily did the visitors agree with Lieut.-Col. Farquharson when he claimed with justifiable pride that Invercauld House was one of the most beautifully situated mansions on Deeside. In front of the lawn lay the silvery Dee, shimmering in the sunshine, while around was a great range of majestic hills, forming a setting unsurpassed in this or any other country. Little wonder the King and Queen and the other members of the Royal Family find the fine bracing air of this district so much to their taste. It is, indeed, a fit setting for the home of kings.

A short business meeting was held after tea, when it was announced that the Club had undertaken, with the kind permission of Lieut.-Col. Farquharson, to conduct excavation work at Kindrochit Castle, near Braemar, the oldest castle on Deeside. The work will be done under the supervision of Dr. W. Douglas Simpson. Lt.-Col. Farquharson gave a racy outline of the Farquharson family and their associations with Invercauld, and Mr. John Macpherson, J.P., Braemar, a great authority on the lore of the district, supplemented Lt.-Col. Farquharson's account with a delightful and instructive paper on the history of the Farquharson clan, in which he included accounts of many stirring episodes in which, down through the centuries, the clan had figured.

Sir Francis Outram, Bt., Aboyne, on behalf of the party, warmly thanked Lt.-Col. Farquharson and Mr. Smith, his factor, for the kindly reception that had been given them at Invercauld House. Mr. Macpherson was also thanked for his address. Invercauld House was thrown open to the party, and great interest was taken in the wonderful old pile. The room in which the Jacobite leaders met in 1715, prior to the standard being raised on the Braes O'Mar, was duly shown. Thereafter the party motored to Ballater, and entrained for Aberdeen, after enjoying one of the most delightful outings held under the auspices of the Club.

ANSWERS TO CORRESPONDENTS.

Annuals Rabbits will not Destroy. *H. B. M.* Rabbits vary a great deal in their selection of plants for food, according to locality and the supply of natural food available. The following list is a good selection of annuals these animals seldom eat: Acrodinum paseum, Anagallis, Bartonia aurea, Cacalia coccinea, Chrysanthemum (annual varieties), Catananche caerulea, Datura chlorantha, Eschscholtzia (many beautiful colours), Eutoca viscida, Helichrysum, Lavatera, Limnanthes Douglasii, Malope grandiflora, Marigold (all kinds), Nasturtium, Nicotiana affinis, N. Sanderae, Phacelia campanularia, Poppies (all kinds), and Zinnias. Many of these may be obtained in separate colours. Plants raised in pots and planted out are more liable to be damaged by rabbits than those sown where they are to flower.

Antirrhinums Diseased: *F. L.* We could find no fungus disease present on the specimens received from you. Evidently the trouble is due to sun scorch.

Big Bud on Yew: *A. T. H.* The big buds in the Yew are caused by a cousin of the mite causing Big Bud in Black Currants. Its name is Eriophyes psilaspis Nal., and is not uncommon on Yews, especially when cut to form a hedge. Apparently the cutting, like hard pruning in the Black Currant, renders the plant more susceptible. It is doubtful if anyone has ever tried a remedy, but the obvious line of trial would be dusting with fine flowers of sulphur in the spring, and, if necessary, repeating the treatment once or twice at intervals of a fortnight.

Brown Rot Fungus on Cherries: *E. G. J.* The tree has been attacked by the Brown rot fungus, Monilia cinerea, which attacks through the flowers. All dead wood should now be carefully cut out and burnt, leaving nothing but healthy growth. If this is not done the tree will be attacked more severely next spring, as the fungus produces abundant masses of spores on the dead wood and withered flower trusses.

Cabbage Root Fly on Brussels Sprouts: *A. M. D.* The Brussels Sprouts plants are attacked by the larvae of the Cabbage Root Fly, Phorbia brassicae. As a rule Sprouts escape this pest, though Cauliflowers, especially early ones, are very susceptible. Generally speaking, the quicker growing the variety and the more it is stimulated by manure the more susceptible it becomes. No cure can be effected. Prevention may be secured when an attack is feared by the use of tarred felt discs. These must be fixed round the plant so soon as it is put out. A plan that is preferred by some growers is to water the plants on the 4th, 10th, and 20th day after putting them out with a solution of corrosive sublimate. The strength employed is one ounce per ten gallons, but it must be remembered that the substance itself is a dangerous poison. At the strength advised, however, it is weaker than when used as a throat spray for human beings. It has the effect of killing the larvae and so should be used in an advanced case like yours.

Gooseberry Cluster Cups: *A. E. T.* The fungus is one of the "rusts" and is known as the Gooseberry Cluster-cup (Puccinia Pringsheimiana). It seldom, if ever, causes appreciable injury to the crop. It is one of a class of fungi which live during their life history on two different kinds of host-plants; in this case, the second host-plant is the Sedge (Carex).

Names of Plants: *A. M.* 1, Jamesia americana; 2, too withered to identify; 3, Crataegus coccinea; 4, Euonymus Thunbergianus; 5, Ribes aureum; 6, Spiraea canescens var. myrtifolia; 7, Aegle sepiaria; 8, Veronica elliptica; 9, Rhus cotinoides. *J. M. W.* 1, Libertia formosa; 2, Fuchsia procumbens; 3, Nerium Oleander.

Onion Seedlings Unhealthy: *H. B. M.* When the seedlings arrived they were too dried up to enable us to determine the cause of the trouble. Send fresh specimens packed in a tin box.

Peach Leaves Damaged: *W. H. B., Garstang.* The injury to your Peach leaves resembles that caused by "scorching" of some kind. No fungus was present.

Pond for Water Lilies: *F. C. K.* In making a Water Lily pond with puddled clay, excavate the soil to a depth of two feet to three feet, or until the clay subsoil is reached, which must be absolutely impervious to moisture; if not, hard, impervious clay must be added and well-trodden or kneaded continually until the desired end is obtained. Care must be taken to keep the clay well moistened during the operation; at no time should it be allowed to become dry whilst kneading it. If the work is not completed in one day, the clay should be well wetted and covered with wet sacks or similar damp material to prevent it from cracking. Cement trodden in the clay is very satisfactory, using from one hundredweight to two hundredweight to a pond of the dimensions you state. It is important that the pond be lower than the ground level and that the sides or retaining wall be well beaten to a sufficient thickness so as to prevent the water percolating through and also to keep out water-rats and moles, as these animals betimes frequent Lily ponds in quest of water, and the leakages they cause are difficult to locate. Allowance must necessarily be made for evaporation during hot weather, as it is important that the water should be kept up to the required level for the successful cultivation of Nymphaeas. However, cemented ponds are by far the most satisfactory in the end.

Quince Unhealthy: *H. H. H. W.* We have examined the specimen twigs of Quince and can find no trace whatever of fungus.

Strawberries Diseased: *M. L.* We feel certain your plants are suffering from an attack of eelworm, in which case they should be dug up and burnt. In due course obtain young, clean stock from a new source and plant them on a different site.

Vines Unsatisfactory. *A. G.* The unsatisfactory condition of your vines is evidently due to some cultural error, and in all probability the condition of the border is unsatisfactory. There was no fungus disease present in the specimens sent.

Varieties of Mushrooms: *G. G.* In olden times, say nearly a hundred years ago, two reputed varieties of Mushroom were grown in the neighbourhood of Paris. One was grown in very firm soil, and was of yellow colour. The other was grown in very loose black, rich soil, and on dung ridges. This was of small size and of a delicate white colour. Both were considered varieties of the common or field Mushroom (Agaricus campestris). In this country they are usually allowed to attain full size before they are gathered, as being more economical. The appearance of them would be greatly improved if they were gathered while the gills were still of a delicate pink or flesh colour. They would be more solid and white, if gathered in the small state, known in this country as "buttons." It is usually at this stage they are used for pickling, and necessarily would be more expensive if bought from the markets though they might be gathered in home cultures where expense is of less importance than in a market garden. It might be worth while trying Mushroom spawn from France to see if the desired quality is obtainable. It is certain that there are many varieties of the wild Field Mushroom in this country, varying in colour and other respects, and some of them have been cultivated at one time or another.

White Worms: *S. G., Rotherham.* The pest sent is a "white worm" or Enchytraeid. These worms are frequently present in rotting organic matter and are not usually supposed to be harmful. Their presence, however, often accompanies other troubles causing rotting. In this case their presence clearly shows that sterilisation was not sufficient. Was the temperature of the inside of the soil mass under treatment ascertained? The failure of the Tomatos, etc., is probably due to other causes unascertainable except by inspection. You should apply to the Advisory Mycologist at Leeds University, where advice is given gratis.

Communications Received.—S. P.—J. H. P.—Constant Reader—R. B.—G. G.—D. L. N.—W. R. B.—A. S. W.—J. M. W.—G. H. C.

MARKETS.

COVENT GARDEN, Tuesday, June 16th, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–18 0
—elegans	10 0–12 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray, —12's, 15's	5 0– 7 0
Crotons, per doz.	30 0–45 0
Cyrtomium	10 0–25 0
Erica, 48's per doz.	21 0–30 0
—magnifica, 48's per doz.	24 0–30 0
—coccinea, 48's per doz.	21 0–24 0
— —60's per doz.	8 0–10 0

	s. d. s. d.
Hydrangea White, 48's per doz.	18 0–30 0
—Pink, 48's per doz.	18 0–24 0
—Blue, 48's per doz.	30 0–48 0
Marguerites, white, 48's per doz.	15 0–18 0
Mignonette, 48's per doz.	15 0–18 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 0
Rhodanthe, 48's per doz.	8 0–10 0
Roses, Polyantha, 48's per doz.	18 0–24 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	18 0–24 0
—cuneatum, per doz. bun.	2 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays	1 6– 2 6
short ,,	0 9– 1 3
—Sprengeri, per bun.	
long sprays	1 6– 2 0
med. ,,	1 0– 1 6
short ,,	0 4– 1 0
Carnations, per doz. blooms	2 0– 3 0
Chrysanthemum maximum, doz. bun.	3 0– 6 0
Coreopsis, per doz. bun.	3 0– 4 0
Cornflower, per doz. bun	1 6– 2 0
Croton leaves, var. doz. leaves	0 9– 2 6
Delphiniums, various, per doz. spikes	2 0– 5 0
Fern, French, per doz. bun.	0 9– 1 0
Gaillardia, per doz. bun.	3 0– 4 0
Galax, American, green and bronze, per doz. bun.	— 1 0
Gardenias, per box, 12's, 18's	4 0– 6 0
Gladiolus, Blushing Bride, per doz. bun.	18 0–24 0
—White, per doz. bun	12 0–18 0
—Peach Blossom, per doz. bun.	12 0–18 0
—primulinus, per doz. spikes	1 6– 2 0
Halley, per doz. spikes	3 0– 4 0
—Prince of Wales, per doz. spikes	4 0– 5 0
—Scarlet, per doz. spikes	4 0– 5 0
—Cream, per doz. spikes	3 0– 4 0
—Giant White, per doz. spikes	4 0– 5 0
Gypsophila, white, doz. bun.	9 0–12 0
Iceland Poppies	2 0– 2 6
Lapagerias, per doz. blooms	3 6– 4 0
Lilium longiflorum long, per doz.	3 0– 4 0

	s. d. s. d.
Lilium speciosum rubrum, long, per doz. blooms	4 0– 5 0
—short ,, ,,	3 0– 5 0
Lily-of-the-Valley, per doz. bun.	24 0 30 0
Nigella, Blue, per doz. bun.	6 0– 9 0
— per doz. bun.	3 0– 4 0
Orchids, per doz.	
—Cattleyas	24 0–36 0
—Cypripediums	5 0– 7 0
Paeonies, White per doz.bun. 6's	9 0–12 0
—Pink, per doz. bun. 6's	9 0–12 0
—Red, per doz. bun. 12's	9 0–12 0
Pinks, Her Majesty, per doz. bun.	4 0– 6 0
Pinks, Mrs. Sinkins, per doz. bun.	3 0– 3 6
Pyrethrum Double White, per doz. bun.	4 0– 5 0
—Double Pink, per doz. bun.	3 0– 4 0
—Single Red, per doz. bun.	3 0– 4 0
—Single Pink, per doz. bun.	4 0– 5 0
Richardias (Arums) per doz.	5 0– 6 0
Roses, per doz. blooms, Richmond	2 0– 3 0
—Liberty	2 0– 3 0
—Madame Butterfly	2 0– 4 0
—Mme. Abel Chatenay	1 6– 2 6
—Melody	2 0– 3 0
—Molly Sharman Crawford	2 6– 4 0
—Ophelia	2 6– 3 0
—Sunburst	2 0– 3 0
Smilax, per doz. trails	3 0– 3 6
Spanish Iris, per doz. bun.—	
—Blue	12 0–18 0
—Mauve	12 0–18 0
—White	12 0–18 0
—Yellow	18 0–24 0
Statice, mauve	5 0– 6 0
Stephanotis, per 72 pips	3 0– 3 6
Stock, English white	9 0–18 0
Sultan White, per doz. bun.	6 0– 8 0
Sweet Peas, per doz. bun.	5 0–12 0
Violas, per doz.bun.	1 0– 1 6

REMARKS:—In this department conditions have been fairly active during the past week. Supplies have been sufficient to meet all requirements, and prices have been further reduced for all subjects. Carnations are arriving in good condition in spite of the hot weather. Roses generally are very medium in quality, and good reds and whites are difficult to find. Other coloured varieties are in a much better condition and include Madame Butterfly, Columbia, America, Ophelia, Golden Ophelia, Sunburst, Melody, and Mme. A. Chatenay. A few outdoor blooms are now on sale but mostly bunches, which at present are too short for decorative purposes. Spanish Irises are arriving in large quantities, but many blooms suffered in transit before they reached the market, and only those cut in a backward condition are suitable for re-despatch. Delphiniums are increasing in quantity almost daily, and a better selection is now on sale. The newest arrivals in this department are Coreopsis, Gaillardias, Sweet Sultans, and mauve Scabiosa caucasica. Scented Paeonies are arriving in good condition from several districts and are in good demand. White Pinks, Her Majesty and Mrs. Sinkins, are now taking the place of white Pyrethrum, which begins to show signs of finishing. Double white Stock is much improved in quality and meets a good demand; some fine blooms of the mauve and pink varieties are on sale.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—London Pippin	17 0–18 0
New Zealand—	
—Jonathan	18 0–20 0
—Sturmer	20 0–22 0
—Delicious	17 0–18 0
—Dunns	18 0–20 0
—London Pippin	17 0–18 0
Tasmanian—	
—Jonathan	16 0–18 6
—Scarlet Pearmain	16 0–17 0
—Cleo	18 0–20 0
—Others	16 0–18 0
Bananas	16 0–27 6
Cherries, French, per box	1 6– 3 0
—per crate	6 0–10 0
—per box	1 6– 2 6
Figs (Forced) doz.	8 0–12 0
Gooseberries, per ½ sieve	5 0– 7 0
Grapes—	
—Belgian	2 0– 2 6
—English—	
—Hambro, per lb.	2 0– 4 0
—Muscat	4 0– 8 0
—Canon Hall	5 0–10 0
Grape Fruit, Cuban	— 40 0
—Jamaica	— 40 0
—Florida, finest	45 0–50 0

	s. d. s. d.
Lemons, Messina, per box	12 6–16 0
—Murcia	16 0–25 0
—Naples	22 0–35 0
Melons (Forced)	3 0– 6 0
Oranges, Jaffa	16 0–18 0
—Spanish—	
—300's	20 0–40 0
—360's	20 0–40 0
—504's	20 0–30 0
Peaches, English per doz.	7 6–24 0
Pears, South African—	
—Keiffer	3 0– 3 6
—Josephine de Malines	5 0– 5 6
—Winter Nelis	3 0– 5 6
—Doyenné du Comice	6 0– 8 0
Pines	3 6– 4 6
Spanish Apricots—	
—per ½ sieve	10 0–16 0
—per crate	6 0–10 0
Strawberries—	
—Southampton, 2 lb.	2 0– 4 0
3 lb.	3 0– 7 6

Vegetables: Average Wholesale prices.

	s. d. s. d.
Asparagus—	
—Evesham	3 0– 5 0
—Special	6 0–18 0
—Devon	8 0–10 0
Beans, Guernsey, per lb.	0 9– 1 3
—Worthing	0 9– 1 3
Beets, per cwt.	5 0– 8 0
Broad Beans, per bushel	2 0– 3 0
Cabbage, per tally	10 0–12 6
Canary Island Tomatos	20 0–27 6
Cauliflowers, per doz.	2 6– 5 0
Carrots, new, per doz. bun.	6 0– 8 0
Cucumbers, per doz.	4 0– 6 0
—Flats, 36's, 42's	12 0–18 0
Dutch Onions	11 0–12 0
Endive, per doz.	3 0– 3 6
Greens, best, per bag	4 0– 5 0
Horseradish, per bundle	2 0– 2 6
Lettuce, Cos, doz.	2 0– 4 0
—Cabbage Lettuce,	2 0– 3 6
Mushrooms, cups	2 0– 2 6
—broilers	1 0– 1 6
Marrows, doz.	8 0–12 0

	s. d. s. d.
Onions, Egyptian, per bag	10 6–12 0
—English, per cwt.	12 6–14 0
—Spring per doz.	2 6– 3 0
Parsnips, per cwt.	3 0– 4 0
Peas, English per bushel	14 0–20 0
Potatos, Canary Island	10 0–12 0
Potatos, per ton—	
—Old, per cwt.	6 0–10 0
—New Guernsey, per cwt.	10 0–12 0
—Jersey, per cwt.	10 0–12 0
—Spanish, new, per cwt.	— 20 0
—St. Malo, per cwt.	9 0–10 0
Radishes—	
—Round	1 0– 2 0
Rhubarb, per doz.	7 0– 9 0
Spinach, per bushel	3 0– 4 0
Tomatos, English, per lb.—	
—Pink	10 0–11 0
—Pink & White	10 0–11 0
—White	8 0– 9 6
—Blue	8 0– 9 6
—Guernsey	9 6–10 0
Turnips, new, per doz. bun.	8 0–10 0

REMARKS.—A considerable volume of produce is now being handled in every section. The fine weather has encouraged the demand for most fruits and the trade all round continues good. Apples from New Zealand and Tasmania are moving at firmer prices, but it is likely that the increasing arrival of Strawberries will have an adverse effect on values of the former fruit. The demand for Pears and Grapes from South Africa has been maintained, and Apricots and Plums from Spain have found ready buyers. French Cherries have been in very poor condition, and the Strawberries from that country have not been altogether satisfactory. As might be expected Lemons and Oranges are in very firm request. Grape Fruit is also in demand. Gooseberries are plentiful, the supplies of Dutch berries being a disturbing factor so far as English Gooseberries are concerned. English Tomatos have come along very heavily and prices have a lower tendency. The Cucumber trade is good, comparatively large quantities selling well. Evesham Asparagus is plentiful, and with Peas more abundant, prices are inclined to be lower. Broad Beans are not required and are quoted at very low figures. Mushrooms are not a good trade, a few tight cups only are selling well. Hothouse fruits, such as Peaches, Grapes, Melons, and Figs, are available in quantities and are a moderately active business. Strawberries from all sources are more plentiful.

Green vegetables are scarcer and higher prices are being asked. New Potatos are a poor trade.

GLASGOW.

BUSINESS in the cut flower market has been very difficult all the past week. As a result of the tropical heat the blooms were badly blown and large quantities were unsaleable so that salesmen were compelled to accept whatever prices were offered by the trade, consequently the quotations which follow are more or less nominal and cannot be regarded as an indication of normal values. Tulips, Irises and Pyrethrums suffered most and the former only made 6d. for 6's. There was a glut of Pyrethrums and while blooms of special quality made up to 8d. and 9d., the bulk of the supplies averaged 2d. and 3d. and in some cases even less was accepted. Imperator Iris ranged from 1/- to 1/3, Louise 1/-, and yellow 1/3 to 1/6, but ordinary quality was only worth about 6d. Roses were cheap, Richmond selling at 1/- to 2/- per doz.; Mrs. H. Stevens, 1/- to 2/6, Ophelia 3/-, Mme. Abel Chatenay 3/6, and America, which was a poor seller, only brought from 1/- to 1/6. Carnations of all colours were fairly steady at 3/6 to 4/6 per dozen and locally-grown Sweet Peas made 10d. to 1/- for 12's and 1/6 to 2/- for 18's. Lilium longiflorum (Harrissii) was very plentiful at 2/- to 3/6 per dozen. Double White Narcissi was worth 4/- to 5/-, Stocks 8d. to 1/-, Paeonies 6d. to 1/-, for 12's, large Gypsophila 1/- to 1/3, and French 9d. to 1/-. Gladioli were less affected by the heat than other flowers and the Bride and Hermione averaged 1/- to 1/3, Maiden's Blush 1/3 to 1/6, and Salmon 1/6 to 1/9.

Pot plants were in good demand. Large Hydrangeas made up to 4/- each, small 1/6 to 2/-, Rambler Roses 5/- to 7/-, Marguerites 9/- doz., Fuchsias, 4/- to 8/- each, bowls of Geraniums 5/-, Pelargoniums 2/- to 2/6 and green Aspidistra 1/- to 1/3.

There was a better market for bedding plants and as varieties were not so numerous higher prices were conceded. Stocks were worth 2/- per box, Lobelia 1/6 to 2/-, Geraniums (Paul Crampel), 4/- to 8/- per dozen, Coltness Gem Dahlias 4/- to 5/-, Marguerites in 3-inch pots, 3/- per dozen, Begonias, 6/-, Gladioli, 4/-, Sweet Peas and Chrysanthemums, 1/6 per box.

The outstanding features of the vegetable department was the active demand for salads. Scotch-grown Lettuces advanced to 4/6 per dozen, English 4/- and Dutch 3/6. Cucumbers sold from 6/- to 9/- while Scotch Tomatos averaged 1/4 to 1/7 per lb., English 1/3 and Guernsey 1/3 to 1/4. Radishes were 1/- up at 2/- to 4/-, Asparagus fluctuated between 4/6 and 6/6 per bunch. French Carrots and Turnips were dearer at 1/4 per bunch and Dutch realised 6d. and 7d. Cauliflowers averaged 4/6 and 5/6 per doz., Peas and French Beans, 2/- per lb. Teneriffe Potatos dropped to 12/- per case and Maltese were worth 17/-.

In the fruit section English Strawberries ranged from 1/6 to 2/6 per lb., Gooseberries from 4d. to 5d., Cherries 2/3 to 2/9, and the first arrivals of French Apricots sold at 13/- to 15/- per case. Oranges were dearer, Burriana 240 and 300 at 30/- to 36/-, 200, 360, and 504, 26/- to 32/- per half case, 420, 39/- per case, and Murcias 36/- to 45/-. The demand for Australian Apples continued firm, Jonathans realising up to 23/- per case, Cleopatras 22/- to 24/-, and other brands 19/- to 21/-, while Australian Pears (Winter Nelis and Beurré Bosc) averaged 12/- to 14/- per tray. Home-grown Peaches were worth from 16/- to 24/- per dozen, Dutch 8/-. English Hamburgh Grapes 3/- to 4/6 per lb., and Dutch, 8/-. Grape Fruit sold freely at 30/- for 64's, and at 32/- for 80's and 96's.

TRADE NOTE.

LIST OF FORTHCOMING EXHIBITIONS.

The Gardeners' Chronicle, Ltd., having compiled for their own use a typed list of forthcoming exhibitions to the end of 1925, can supply copies of this list at 2s. 6d. each, on application to the Publisher, *Gardeners' Chronicle*, 5, Tavistock Street, Covent Garden, W.C. 2.

THE WEATHER IN MAY.

THIS month's weather was practically the reverse of that of a normal May at Southport. The mean air pressure was lower than that for any previous May since the record commenced fifty-four years ago, but until the last few days there was extremely little wind. The month was, therefore, uncommonly humid, rainy, and dull. The cloudy days, and warm, and sometimes misty, nights, gave a very small, mean daily range of temperature. The maximum thermometer only once touched 70°, but there was no occasion of frost in the screen, and merely a slight ground-frost (and that on the 1st). The total evaporation was the smallest yet measured for May. Growth was very backward and irregular, and there was a marked lack of spring-time blossom, which formed a striking contrast to the profusion of 1924. The mean temperature was 52.3°, or 1.2° above the average. Only one-hundred-and-fifty-five sunny days were recorded, or fifty-five fewer than the normal number. Rain fell on twenty-two days, or eight more than usual; and the total quantity was 3.99 inches, or 1.86 inch above the average. Thunder was reported on four days, but only the fringes of the respective thunderstorms extended to Southport. A very brief and slight gale occurred on the morning of the 28th. *Joseph Baxendell, The Fernley Observatory, Southport.*

SCHEDULE RECEIVED.

ST. STEPHEN'S HORTICULTURAL SOCIETY.—Exhibition to be held in The Park, Frogmore, on Thursday, July 23.—Secretary, Mr. J. E. Partridge, School House, Park Street, St. Albans.

THE
Gardeners' Chronicle

No. 2009.—*SATURDAY, JUNE* 27, 1925.

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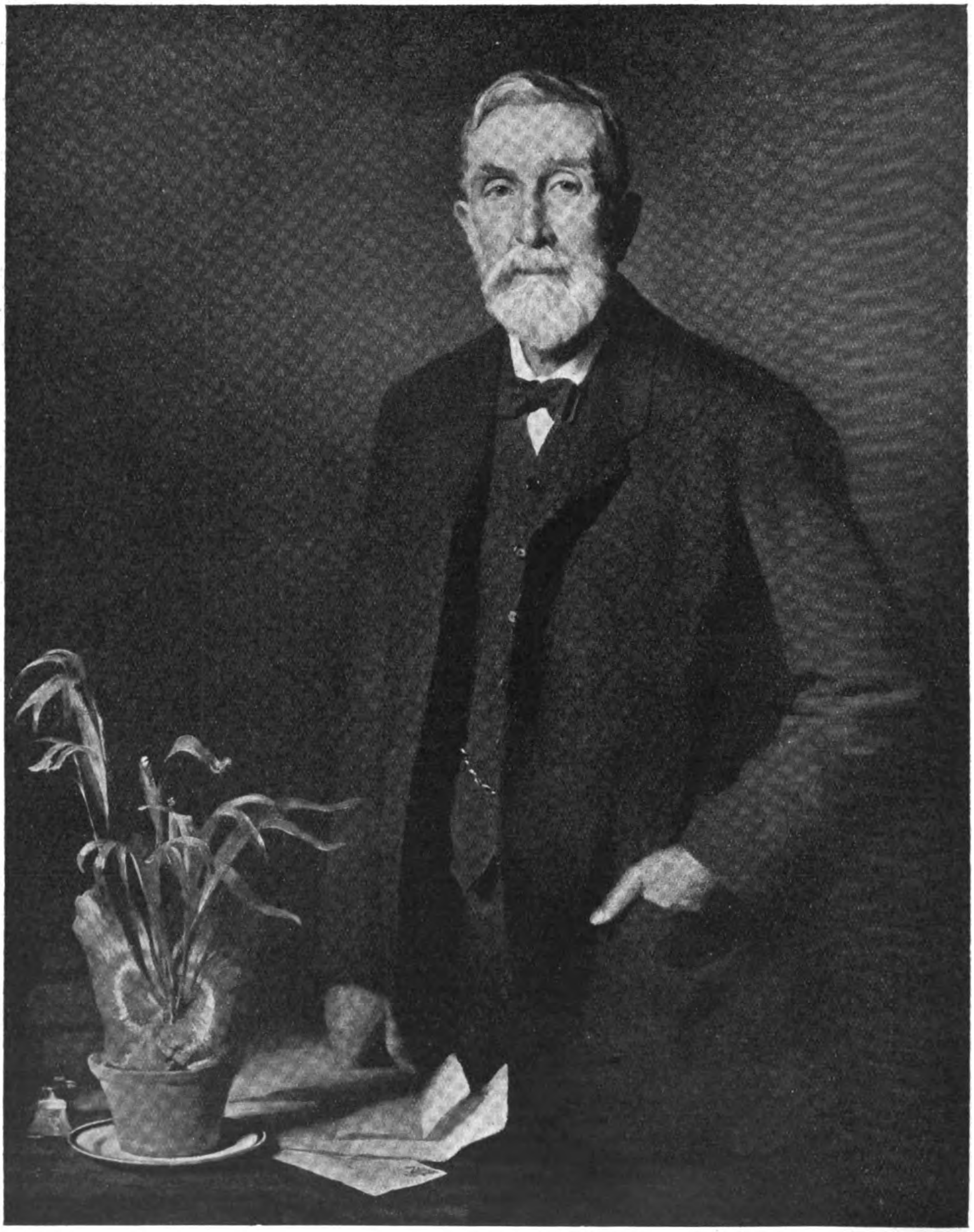
Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 61·8°.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, June 24, 10 a.m. Bar. 30.1, temp. 52°, Weather, Dull.

Double Stocks. Double flowers, of which so many examples are to be found among cultivated plants, present many interesting, but as yet unsolved, problems. In some plants, as for example, Carnations, the production of supernumerary petals to which the appearance of doubleness is due does not involve the complete suppression of the reproductive organs, and hence it is easy in such cases to ascertain by breeding experiments how doubleness is inherited. In other plants, as for example, Stocks and the old alba plena variety of Chinese Primrose, the doubling is complete. In the latter plant it is true that an occasional malformed stamen may occur, but in the Stock neither stamens nor ovules are produced, and hence no doubled-flowered plant can leave progeny. In such cases the inheritance of doubleness can, of course, be investigated only indirectly. It also follows that inasmuch as they are sterile, double Stocks are raised from seed from plants with single flowers. Needless to say, not every race of single-flowered Stock gives rise to doubles among its offspring. Some races breed true to singleness. Others, however, when self-pollinated or crossed with one another give rise to single-flowered and double-flowered plants. Much discussion and investigation have centred round this fact. Claims have often been put forward that by special cultural methods the number of doubles produced from a race of double-throwing singles may be increased. Starvation, growing in small pots, and using for seed-bearing only certain flowers of an inflorescence, have all been said to have an effect in enhancing the proportion of doubles. Experiments by Miss Saunders—to whose investigations much of our knowledge of the subject is due—do not lend support to the view that cultural conditions affect the proportion of doubles to singles. On the other hand, there is ground for believing that age of seed counts. It appears that if seed of a given harvest be kept for several years, the proportion of doubles to singles increases above that which is obtained when a sample of the same stock is sown in the year after harvesting. This, however, has no very direct bearing on the important question, How is it that certain strains of single-flowered Stocks produce both double and single-flowered progeny? Miss Saunders' ingenious and thorough-going investigations have demonstrated that singleness in Stocks is to be regarded as dominant to doubleness, and that plants of a double-throwing single race carry the factors for singleness and for doubleness—in other words, the race is heterozygous for singleness. All the more surprising, therefore, is the fact that doubles should arise in such large numbers in proportion to singles, as they undoubtedly do in many cases. A gardener who sowed double Stocks would be very disappointed if singles were more numerous than doubles, as they ought to be if the double-throwing single behaved in a straightforward, simple, Mendelian way. It must, therefore, be concluded that some disturbing factor is at work. From Miss Saunders' experiments it appears certain that there is nothing peculiar in the behaviour of the ovules of the double-throwing Stock. Suspicion points therefore to the pollen grains. With this suspicion in mind, Mr. Snow, of the University Botanical Department, Oxford, has recently subjected the pollen grains to an experimental analysis. Outwardly, and under the microscope, they look all right. They germinate, albeit not very numerously, when placed in an artificial medium containing the right proportion of sugar. When, however, pollen grains of a double-throwing single race are given a chance to germinate in their natural place—that is, on the stigma of a Stock flower—Mr. Snow finds that the number of pollen grains which succeed is just about one-half (16.17 per cent.) of the number of pollen grains from a single-throwing race (31.1 per cent.), which germinate when placed on a similar stigma. It would seem, therefore, that of the pollen grains of a double-throwing single race, some do not germinate when placed on the stigma, and it may be concluded provisionally that the failures are those pollen grains which are carrying the factor for singleness. On this view, only pollen tubes carrying the factor for doubleness would arrive at the ovules. Of the ovules, half have the factor for singleness and half the factor for doubleness. Therefore, on the average, half the plants produced should be singles and half will be double-flowered. These experiments by Mr. Snow promise to throw new light on the much-vexed question of the proportion of doubles to singles. They also suggest directions in which further experiments might be made. For example, it is not difficult to imagine that if pollen grains carrying the factor for doubleness receive preferential treatment when developing on the stigma and style, so may the ovules developing within the ovary. If this were to prove to be the case, then an explanation would be forthcoming of the fact that doubles often preponderate greatly over singles, and, moreover, it might turn out that the often expressed view that cultural conditions influence the proportion of doubles to singles has after all some truth in it.

Gardeners' Royal Benevolent Institution.—The Festival Dinner (80th Anniversary) in aid of the funds of The Gardeners' Royal Benevolent Institution will take place at Grocers' Hall, City, on Thursday, July 2, under the presidency of the Right Hon. Austen Chamberlain, M.P. (His Majesty's Foreign Secretary). Contributions to be placed on the Chairman's subscription list are earnestly solicited and will be gratefully received and acknowledged by the Secretary, George J. Ingram, at the offices, 92, Victoria Street, S.W.

Presentation to Mr. H. B. May, V.M.H.—Under the genial presidency of Lord Lambourne, a company of about sixty friends met at the Grosvenor Hotel, Victoria, S.W., on Saturday evening, June 20th, to entertain Mr. H. B. May to dinner on the occasion of his eightieth birthday, and to present him with his portrait—painted by Mr. T. Martine Ronaldson—as a token of esteem and in recognition of the great services he has rendered to horticulture during his long life. The dinner tables were delightfully decorated by Mr. R. F. Felton with Roses and Carnations. Those present included Sir William Lawrence, Mr. and Mrs. George Monro, Mr. R. Cory, Mr. D. Ingamells, Mr. W. A. Bilney, Mr. W. R. Dykes, Mr. G. J. Ingram, Mr. and Mrs. R. F. Felton, Messrs. M. and G. Allwood, Mr. D. B. Crane, Mr. W. H. Page, Mr. W. A. Cull, Mr. T. Hay, Mr. C. H. Curtis, Mr. Amos Perry, Mr. J. Fraser, Mr. W. Howe, Mr. H. J. Jones, Mr. F. Jordan, Mr. J. F. McLeod, Mr. J. B. Slade, Mr. T. Stevenson, Mr. D. Cuthbertson, Mr. A. Vasey, Mr. Arthur Turner, Mr. J. B. Linford, Mr. H. Cowley, Mr. S. Segar, Mr. J. B. Riding, Mr. H. Wardle, Mr. D. MacDonald, Mr. J. Cheal, Major Churcher, Mr. S. Summers, and Mr. Frank Reader. After dinner, and following the loyal toast, Lord Lambourne expressed the pleasure it gave him to take part in that evening's proceedings. The gathering was a sort of family one, for Mr. May's friends had come together to make him a little gift on the occasion of his eightieth birthday. The portrait was not a reward for services rendered, but an expression of good feeling on the part of all who had subscribed. All who knew Mr. May knew that he was "a straight man," who always spoke and voted in accordance with his convictions. Mr. May started work in 1857, and had been at work ever since. From small beginnings he built up a fine market business and though he had retired and the business was now in the hands of his son, Mr. May was still busy, and the Council of the Royal Horticultural Society would endeavour to retain his services for as long as it was possible. In addition to his work on the Council, the Wisley Committee, the Floral Committee, and formerly on the Narcissus Committee, Mr. May had done incalculable good by his devotion to charity, notably by his long association with the Gardeners' Royal Benevolent Institution and his chairmanship of the Committee of the Royal Gardeners' Orphan Fund for twenty years. Continuing, Lord Lambourne stated that the idea of the little fête and the portrait originated with Mr. W. Cuthbertson, who, unfortunately, was unwell and unable to attend that evening, while upon Mr. George Monro had fallen most of the work in connection with the presentation. Lord Lambourne congratulated the artist, Mr. Ronaldson, on the happy success of the portrait, and in making the presentation concluded by saying, "I congratulate you, Mr. May, on your 80th birthday. You have had a long life, fairly full of happiness; you have weathered its storms, and I hope you will sail down the remainder of the stream of life on the smooth waters of love and affection." Mr. May was visibly affected by the fine reception accorded him and said he could have no greater reward for anything he had done than to meet so many of his old friends that evening. He greatly appreciated the gift of his portrait, but could never adequately return thanks for the kindliness of all concerned or for the charming way in which Lord Lambourne had made the presentation. He desired to offer special thanks to Mr. Cuthbertson, Mr. George Monro, Mr. R. Cory and the artist for their kindness and consideration. During his long life he had seen many changes in horticulture and it was a pleasure to him to know that the Royal Horticultural Society had made such wonderful progress during recent years. He desired the Council of the R.H.S., through Lord Lambourne, to accept the portrait just presented him, and he felt it would not disgrace the portraits of many noble workers in horticulture which adorned the Council chamber at Vincent Square. Mr. George



PORTRAIT OF MR. H. B. MAY, V.M.H., PRESENTED TO HIM ON HIS 80TH BIRTHDAY, JUNE 20.

Monro stated that the total amount received was £301 18s. 1d., contributed by two hundred and six subscribers, and there was a small balance to be divided between the two gardening charities. He read several of the letters from absent friends, all expressing good wishes, including one from Mr. Wm. Cuthbertson deeply deploring his inability to be present. The Committee thought Mr. May would like the names of the subscribers and so these had been transcribed into a beautiful, morocco-bound book which he asked Lord Lambourne to hand to Mr. May. Sir William Lawrence proposed the health of Mr. T. M. Ronaldson, the artist, and the proceedings concluded by the toast of the health of Lord Lambourne and thanks to him for presiding, proposed by Mr. W. A. Bilney.

New Laboratories at Rothamsted. — On Thursday, the 18th inst., Lord Bledisloe opened the new plant laboratories at Rothamsted, which have been built at a cost of over £21,000 from funds provided by the Ministry of Agriculture. Lord Bledisloe stated that the work on plant pathology which has gone on at Kew and Manchester was being concentrated at Rothamsted, and he had every expectation that its new activities would be of incomparable value to farmers and gardeners at home and throughout the Empire.

National Rose Society's Show.—The summer show of the National Rose Society, to be held in the Royal Botanic Society's Gardens, Regent's Park, on Friday and Saturday, July 3 and 4, promises to be a good one, as very large numbers of entries have been received. New seedling Roses and the big groups of Roses will be as interesting and attractive features as usual.

Appointments for the Ensuing Week.—Tuesday, June 30: Royal Horticultural Society's Committees meet (2 days); Royal Tunbridge Wells Horticultural Society's show (2 days); Bournemouth Horticultural Society's show (2 days). Wednesday, July 1: Hanley Horticultural Fête (2 days); Royal Norfolk Agricultural Association's exhibition at King's Lynn (2 days); National Viola and Pansy Society's meeting; Royal Agricultural Society of England Council meeting. Thursday, July 2: Nottingham and Notts. Chrysanthemum Society's meeting. Friday, July 3: National Rose Society's show at Regent's Park (2 days). Saturday, July 4: Blackburn and District Horticultural Society's meeting and lecture; British Mycological Society's phytopathological meeting at Cambridge.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Gardeners' Royal Benevolent Institution.*—Messrs. Garraway and Co., of Bristol, and Mr. Wheeler, of Gloucester, have achieved an unenviable success. They have managed to fasten upon the Gardeners' Royal Benevolent Institution an annuitant who has not paid one farthing to the funds of the charity, at the expense of others who have subscribed to it for years. Edward Beach, *who has never subscribed one farthing*, is, after five struggles, elected as a pensioner, while James Green, *who has subscribed for twelve years*, is passed over. If this is not a discreditable job, we do not know what a job is. Had the intention been to ruin the charity, a more certain course could not have been taken; for it is clear that nothing is gained by subscribing to its funds; on the contrary, to subscribe is to be declared ineligible. Why should a gardener now continue to subscribe when he sees that those are best off who give nothing? The guineas that he pays the institution produce no advantage to himself; he is more likely to be elected if he keeps his pockets buttoned up. A comparison of the number of votes that each candidate obtained on the last occasion with the amount of his previous subscriptions to the institution, is highly instructive. So that it appears that Beach, who has never subscribed one farthing, polled almost five times as many votes as Green, who had subscribed twelve years, or as Robinson, who had subscribed four years. It also shows that Fitzgerald, an applicant brought forward by Messrs. Lee, of Hammersmith, having paid nothing, was better placed upon the poll than Battey, who had given his hard earnings for seven long years. It is evident that this method of managing matters, although it may afford a wretched triumph to a few nurserymen, must end in the ruin of the charity unless it is immediately put an end to. It completely justifies the assertion, which we have often heard made, that the Gardeners' Benevolent Institution would become a mere nurseryman's convenience. We therefore call upon the committee to come forward at once with some declaration, and as quickly as possible with some bye-law, the effect of which shall be in the first place to limit the candidates to those who have been subscribers to the charity, and, secondly, to secure the pension to those who have subscribed longest; so that no contest shall be possible except among those who shall have subscribed the same number of years. *Gard. Chron., June 29, 1850.*

ORCHID NOTES AND GLEANINGS.

ODONTONIA BARONESS SCHRÖDER.

A PARTICULARLY striking and attractive Orchid, for which Messrs. Charlesworth and Co. are responsible, is Odontonia Baroness Schröder (Fig. 196), obtained by crossing Miltonia Bleuana and Odontoglossum The Czar. The habit of the plant is attractive and it contains something of the sturdy erectness of the Miltonia with the grace of the Odontoglossum. The flowers, too, show very distinctly the combined effect of the two genera, but Miltonia is most evident in habit and style of flower. In Odontonia Baroness Schröder the flowers are of handsome colouring, rose, mauve, deep red, and yellow, all combining to produce a charming effect. A handsome specimen of this fine hybrid figured prominently in the group of Orchids arranged at the recent Chelsea show by the Haywards Heath firm, and this is the one figured above. The spike carried nine flowers and buds, and as the plant was only a small one, it gave an idea of the free-flowering habit of the hybrid.

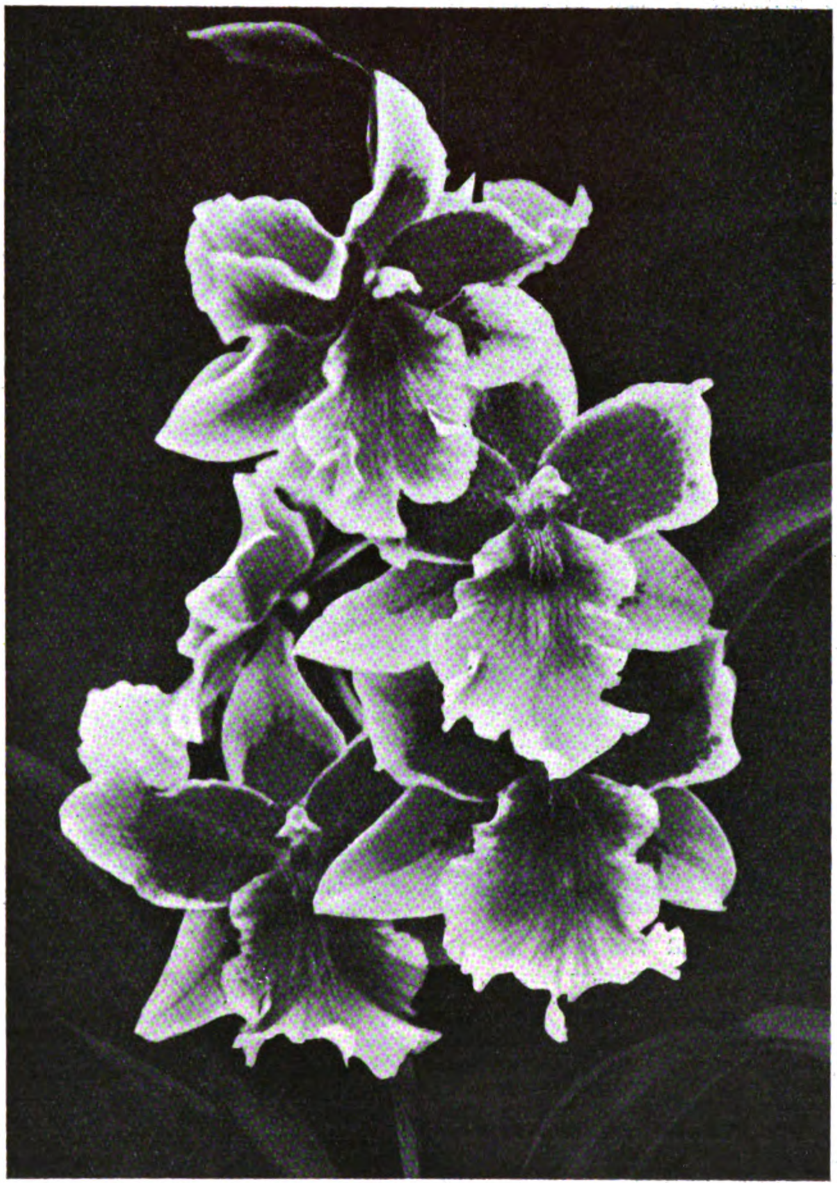


FIG. 196.—ODONTONIA BARONESS SCHRÖDER.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

East Indian House.—During the recent spell of warm weather it has been possible to maintain tropical conditions in this house, and the inmates generally show signs of being greatly benefited by the extra warmth. The plants should be exposed to all the sunlight possible by raising the blinds early in the afternoons so soon as all danger of scorching is past, thus allowing the sun to cause the temperature to rise between 80° and 90° or even higher when the weather is very warm. Plenty of atmospheric moisture should be maintained by damping the floors and stages frequently, especially places under the water pipes. Syringe between the pots, also damp the undersides of the leaves of the plants. Such Cypripediums as are usually grown in this house are greatly benefited by light sprayings overhead, but the water should not be allowed to settle in the axils of the leaves, especially in plants of C. laevigatum, C. Stonei, C. Lowii, and others of this class. Any plants of the above-mentioned Cypripediums will need immediate attention if re-potting is necessary. Pot-bound specimens should be shifted into receptacles two sizes larger, as they are nearly all free-growing and should be potted in an open compost consisting of good fibrous loam, Osmunda-fibre cut into small portions and Sphagnum-moss in equal parts, with sufficient crushed crocks incorporated to render the whole porous. Only a moderate amount of water should be afforded plants that have been re-potted, until the new roots begin to push into the new soil when the supply of moisture should be gradually increased.

Catasetum, Cycnoches, Mormodes and Cyrtopodium.—These singular and interesting Orchids are now in full growth in the same house and all well-rooted specimens need plentiful supplies of water. The flower-spikes generally appear as the new pseudo-bulbs become matured. After the plants have bloomed they should be exposed gradually to full sunshine and watered at the roots until the new pseudo-bulbs are full grown.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

The Rose Garden.—The Rose garden is now gay and will need frequent and copious waterings to enable the plants to continue in vigour. The beds should be watered occasionally with dilute liquid manure from the cowsheds if this is available, otherwise the ground should be sprinkled with guano before watering. Mulching should be practised wherever practicable, and damping of the foliage every evening during hot, dry weather is of great benefit. The tying in of the shoots of strong-growing ramblers calls for constant attention; if neglected new growths soon become interlaced with old ones and cause endless trouble at pruning time. Restrict the number of growths to what is necessary for furnishing the space allotted to the plants, entirely removing weakly growths which are not wanted. Standard and Pillar Roses should likewise be looked over and the growths regulated to the needs of the position, removing any suckers which may appear.

Anemones.—Those who raise the Wind-flower from seeds should make another sowing now, even if they have good stocks of plants from the early spring sowing. Plants raised from this sowing will flower later than those sown in spring, and by this means the flowering season will be prolonged.

Autumn Crocus.—The corms of these should be planted so soon as obtainable and not later than July. C. speciosus is a good grower and increases rapidly; its lilac flowers, with rich, golden anthers, are very attractive.

Agapanthus.—The beautiful South African Lily is largely used for furnishing vases and tubs in the flower garden, and is an ideal subject for this purpose, especially for late summer and autumn effects. The plants are growing freely and need an abundance of water, while those which have not been re-potted recently should be fed liberally.

Bulbs.—Bulbs of the late Narcissi, Hyacinths, and Tulips intended for removal should be taken up so soon as the foliage ripens. The bulbs may be graded, laid out on shallow trays, and placed in a dry, airy place to complete the ripening process.

Border Chrysanthemums.—No further stopping should be necessary. Insert the stakes before the growths become too long. Hoe the ground between the plants and give a mulch of rotted manure. In dry weather keep the plants liberally watered.

Gladioli.—These plants should be staked and tied before they become damaged by wind, as once they become laid they never recover their symmetrical appearance. It is preferable that each plant should have a separate support, but where grown in rows stakes may be inserted at intervals of a few yards, connecting them by lengths of strong, soft material, to which the spikes may be tied.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Perpetual-flowering Carnations.—The main batch of plants being grown for next winter's flowering should now be ready to receive their final potting. Pots seven inches in diameter should be chosen for the plants which were raised from cuttings inserted during January and February, whilst for the later-struck plants, six-inch pots will be large enough. The pots must be thoroughly clean, crocking should be carefully performed, and a layer of clean turf fibre placed over the crocks to ensure perfect drainage. Loam, of the best quality obtainable, will comprise the bulk of the potting compost. It should be of a medium, fibrous texture, and should, if possible, have been stacked for at least six months before use. To four parts of loam and one part of well decomposed hot-bed manure, add half a part each of crushed mortar rubble and wood ash, some fine grade oyster shell and coarse silver or sea sand, more or less of the latter, as the loam happens to be heavy or light. Lime is essential to Carnations, and if the loam used is deficient in this property a sprinkling of air-slaked lime in the compost, in addition to that supplied by the inclusion of mortar rubble and oyster shell, will be beneficial. The whole should be thoroughly mixed, and when used, moderately dry, so that it will not adhere to the hands or the potting stick. Pot firmly, taking care not to cover the old ball of soil deeply, or stem rot may result. After potting, the plants may be stood outside on a coal ash bed, or, if cold frames are available, such accommodation may prove of advantage in the event of wet weather, when the frame lights may be placed over the plants. An excess of moisture at the roots immediately after potting is likely to prove harmful. On the other hand, should the weather be very bright, a slight shade during the hottest part of the day may be necessary until the plants have recovered from the check of re-potting.

HARDY FRUIT GARDEN.

By E. Neal, Gardener to J. A. Nix, Esq., Tilgate, Crawley, Sussex.

Protecting Ripe Fruits.—When gardens are surrounded by forest trees and shrubberies there are always plenty of birds with their young ones at this time of the year ready to feed on any fruits that are on the point of ripening. When the fruit bushes are distributed in various parts of the garden it is very difficult to protect them from the ravages of birds. When I took charge of these gardens nearly thirty years ago I found a difficulty in protecting bush fruits owing to these being planted in different parts of the garden. I have made it a practice since to grow them in one part of the garden by themselves, including Raspberries. It saves time and is economical. I place wire netting all round the outside of the fruit quarter, three feet high, and attached to strong stakes; fish netting is then placed over the top; this being of a standard size the pieces are laced together until they form one close net. The string netting is supported by stakes about eight feet out of the ground to keep it clear of the bushes. On the top of each stake is placed some rough hay or any suitable material; this in turn being covered with canvas and tied tightly to the stake. This keeps the nets in position and prevents them from being damaged by high winds.

Apricots.—The borders should be examined to see if water is required; if the soil is on the dry side it should be watered. Trees carrying heavy crops of fruit should be given copious supplies of manure water, not too strong. This will help the trees to swell their fruit. A mulching of light material will serve to keep the border cool and prevent it from drying out, and this should be applied without delay. More shoots than will be ultimately needed may be trained in, as the branches of Apricots are prone to die back and leave a bare space on the wall.

FRUITS UNDER GLASS.

By F. Streeter, Gardener to Major Albert Pam, Wormley Bury, Broxbourne, Herts.

Early Vinery.—The Grapes in the earliest vinery are now ripe. Keep a free circulation of air in the house at all times, and give Black Grapes a slight shade, otherwise they quickly lose their colour. Examine the borders frequently for moisture; although the fruits are ripe they must not suffer from drought, otherwise the buds at the base of the shoots will suffer and cause an unsatisfactory crop next season. Continue to keep the laterals pinched out, taking care not to touch the fruit in removing them from the trellis. Any bunches showing signs of shanking or not colouring well should be noted for inspection of the borders in the autumn. Sometimes half-an-ounce of nitrate of soda in a gallon of soft water will give an extra finish to bunches showing signs of failing to become perfectly black. Where the borders are partly outside they must be constantly watched for signs of excessive dryness during very hot weather, and given a good mulch to conserve the moisture. Place a strip of wasp-proof netting over all ventilators; this will also keep out flies and birds.

Successional House.—Where the mid-season Grapes are stoning, admit a free circulation of air during bright sunshine. Keep the laterals in check, with the exception of Madresfield Court, which will now require very close attention, especially when the berries begin to colour. This variety must be watered very cautiously during this stage, and a slight shading will prove beneficial. Cover the border with clean straw to keep the moisture from rising too rapidly after watering. Should dull, damp weather set in, the pipes must be warmed at night, but leave the top ventilators open a little. Make quite sure that Muscats are not overcropped, or it will be impossible to finish them properly. Keep them slightly warmer than most varieties.

THE KITCHEN GARDEN.

By H. Prince, Gardener to the Hon. Mrs. Greville, Polesden Lacy, Dorking.

Celery.—All late Celery which has been pricked off into frames should be planted out in trenches in the final quarters. If the trenches have become too dry or hard, they should be given a thorough soaking a day or two before planting; also thoroughly water the plants the evening before to ensure they may be lifted with a good ball of soil. Keep a sharp look out on the earlier batches for attacks of Celery Fly which is usually prevalent at this time. There is no better remedy than a good dusting of soot over the foliage, especially on mornings when there is a heavy dew.

Onions.—To procure large Onion bulbs regular attention must be given during a dry spell to watering the beds. Thorough soakings given late in the evenings will materially help to swell the bulbs. Keep the bed regularly hoed, and feed the plants liberally with soakings of liquid manure and occasional dressings of a suitable artificial manure, well watered in. Unless large Onions are required from the ordinary spring sowings out-of-doors, drastic thinning need not be resorted to, as, if the plants are left fairly crowded, plenty of good bulbs of a useful marketable size can be had.

Endive.—Unless Endive is required in very early autumn, now is a good time to sow a batch for early supplies. Ground will be available for this crop where early Potatos are being lifted. The Batavian Endive is the variety most commonly grown, but a few rows of the green and white curled varieties should also be sown. They not only provide variety for salad dishes, but are also very decorative.

Mulching.—The mulching of crops is a most important duty this month; there are few crops in the kitchen garden that will not benefit from mulching. All short grass mowings should be saved and utilised. Peas, Runner Beans, French Beans, and Broad Beans should be given a liberal mulch of farmyard manure, and well watered, on the first favourable opportunity.

Tomatos.—Plants intended for cropping out-of-doors are getting nicely established. Tomatos in the open do best under a wall facing south or against a building of any description in a warm spot, as all the sunshine available should be allowed to reach the plants so as to hasten the ripening of the fruits. In an ordinary season early June planting allows sufficient time for the crop to mature out-of-doors in the South of England.

FOR NORTHERN GARDENERS.

By James Jeffery, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, Westmoreland.

Climbers.—Climbers on pergolas, walls, etc., are now growing freely and will require constant attention as regards the tying and regulation of young growths to prevent their becoming entangled or broken by the wind. When training, tie loosely so that the young growth may be devoid of any formality and yet have secure support. Watch should also be kept for pests (aphis, etc.) that may appear from time to time, and which must be checked at once by using some approved wash. Specifics are best applied late in the afternoon, or, better still, on a dull day.

General Work in the Flower Garden.—Bedding plants intended for making-good blanks which will occur during the first week or two after planting out, should be so far as possible, grouped together in the frame yard, and well attended to in the matter of watering until wanted. Weed killer should not be used on the paths if the ground be very dry; after a shower is the best time to apply it. All bedding plants should be staked and tied so soon as growth permits; newly planted trees and shrubs will require a good drenching of water, and should they show signs of suffering in dry weather, daily overhead spraying with a syringe will be useful.

Early Peas.—Peas now coming into bearing will benefit in dry weather by occasional copious supplies of water. A mulch may also be given, which will conserve the moisture for a much longer period. Keep the soil stirred with the hoe, and do this before applying the mulch.

Asparagus.—Keep the Asparagus beds free from weeds, and if at all dry a good watering should be given, followed by an application of liquid manure. If this stimulant be not available, dissolve a handful of guano in a three-gallon canful of water, finally washing it in with clear water. See that the stems are not laid by high winds, and use stakes to prevent this if necessary.

Seed Sowing.—Continue to make successional sowings of all salads. Frequent small sowings of Round or Summer Spinach will be found necessary during dry weather. Water the drills before sowing the seed.

THE ROSE GARDEN.

ROSE FRED. J. HARRISON.

At the National Rose Society's provincial show of 1923 held at Saltaire, a Gold Medal was awarded to a new Rose raised by Messrs. Alex. Dickson and Sons, Newtownards, and named Fred J. Harrison (Fig. 197). It attracted a good deal of attention by reason of its rich colouring and sweet fragrance. An illustration of one of the flowers shown accompanied the report of the Saltaire Show in these pages, but the illustration given herewith shows a bloom photographed as cut from the Rose fields at Newtownards, without any manipulation. The breadth, smoothness, and substance of the petals are particularly good; the colour is a rich bright shade of crimson with deep crimson shading towards the upper margins of the petals. The comment on this variety in *The Gardeners' Chronicle* of July 21, 1923, was "a finely formed flower of a bright shade of crimson. It is powerfully scented, and is one of the few new crimson Roses to carry fragrance." This opinion is confirmed by more recent observations, and to it may be added the observation that the plant is of vigorous growth and almost continuously in flower throughout the season.

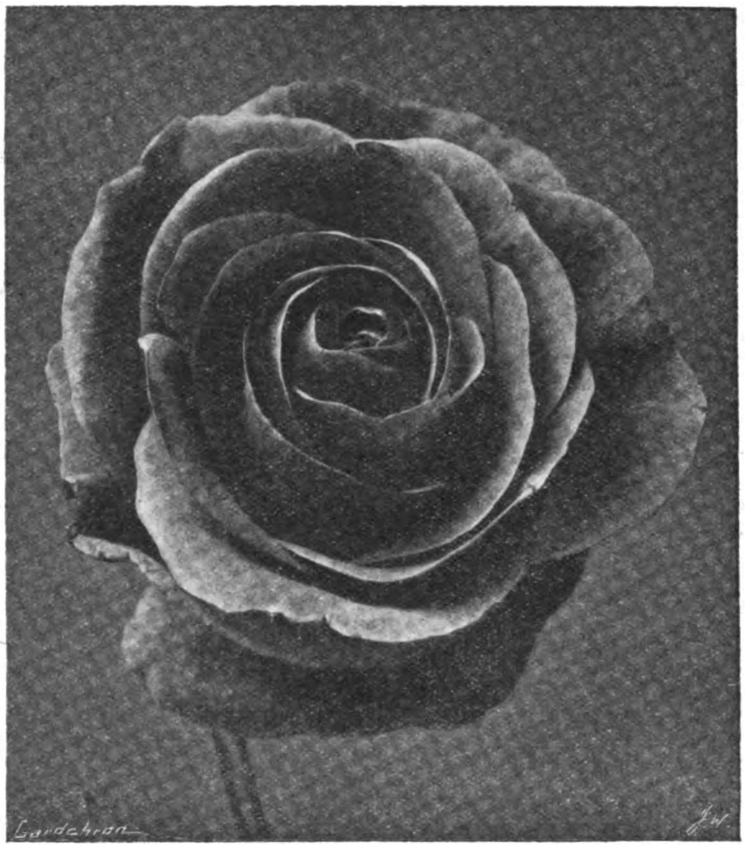


FIG. 197.—ROSE FRED. J. HARRISON.

DISEASES.

Mildew and other fungous diseases can only be controlled by taking prompt measures to check them immediately they appear. A timely application of powdered sulphur when the leaves are damp in the morning, or spraying with sulphide of potassium at the rate of half-an-ounce to one gallon of water, will check the progress of the diseases, whereas, if the spores are allowed to ripen they become distributed by various agencies, and a very large area may be involved. *W. Auton.*

NATURE PRINTS.

Making records of dry leaves, Ferns, etc., by exposing a piece of sensitised paper beneath the specimens is a very old procedure, mostly undertaken for amusement or decoration. Yet it sometimes happens that faithful records are needed for study with a minimum amount of cost and of manipulation in their obtainment.

In the course of a study of the varieties of Perry Pears a set of reproductions of leaf shapes was much needed (incidentally it was found that also bud and shoot characters could be recorded) without having recourse to the time- and labour-stealing method of costly negative and subsequent silver print. I now have records of more than one hundred varieties of these Pears, both of blossom spurs and season's shoots; for comparative purposes such prints can be carried to the orchards, a treatment which would invite disaster to actual dried specimens.

Without entering too far into photographic minutiae, two methods seem best adapted to the purpose; it may be said at once that the "bromide," etc., papers on the market are not only too costly (sizes to 12 × 10 may be wanted), but also are unsuited from the stiffness of the supporting paper, and entail the use of that chamber of horrors—the dark room. For shoot records, especially, a rather thin but pliable paper is essential. Moreover, for development or fixation a mere wash in plain water reduces manipulations to a minimum. Such qualities are to be found in the "blue" or ferroprussiate paper, and in the ferro-gallic which is now on the market. With the former a negative image is given, with the latter a positive; the former has the disadvantage that it will not keep more than a few days, and hence needs be home prepared, withal not a difficult process (vide e.g., *Brit. Journ. of Photography Almanac*, for formula). The latter keeps fairly well, and some bought last October was still quite good the following May.

Pressed and dried specimens may be used, but in this case more pressure, so as to entail complete flattening of leaf edges, must be used than is commonly done merely for botanical collections; plenty of padding and a half-hundredweight on a board is advised: ordinary daily press newspaper served for more orthodox blotting paper in the case of Pear specimens; inspection is made after the first twenty-four hours to correct foldings, etc.

Prints may also be made from fresh material placed directly upon the sensitised paper; thus, I have plucked a Potato leaf, placed it to print, and within an hour or so an expert rightly recognised the variety from the finished print. Further, in order to trace the variation of foliage from babyhood to adult, I dug up a young Pear seedling, took a couple of prints, and replanted it; the following year it was too big for such treatment, so the paper, in an open-ended frame, was applied to it as and where it grew (in this case a piece of opaque paper covers the sensitised, and before the opened frame is closed down the black paper is withdrawn) and was successful even in bright sunshine.

Petals are rather easier to handle when fresh than in a dried state, when the best plan is to stick them upon bleached pieces of waste roll film; by staining, more artistic effects may be obtained as the veins may be recorded. With leaves, the venation may be shown better with fresh than dried specimens (which are more amenable when oiled), but the increase of exposure leads to reduction of petiole thickness by light creeping behind. Whenever possible it is best, though not essential, to print in bright sunlight,

According to the subject, a well-sprung, glass-fronted printing frame is required when shoots and buds are required, and one or two thicknesses of "Gamgee tissue" should be placed behind the paper; when very thick shoots are being done it may be advisable to pad up here and there with pledgets of cotton wool, but this I have not often found necessary. Both of the types of paper mentioned lend themselves to bleaching, so that with waterproof Chinese ink the outlines may be traced by hand and the original image completely effaced.

I submit with this note a few specimens of the results that can be obtained, for editorial inspection. Such things as Plumstones may also be made to yield "nature prints," and many characteristic points may be recorded. Generally speaking the transverse section shows best; in any case the stone is cut as desired with a fine saw, the sawn surface is then rubbed down on a very fine glass paper laid on a sheet of glass or flat board. The cut surface is then inked by rubbing it on a glass plate very thinly smeared with printer's ink and pressed down upon a damped sheet of paper. Direct pressure by hand is hardly powerful enough, and a simple press consisting of a board and a strong strip hinged thereto to act as a lever, is very easily rigged up. Thickness of substance, keeling, grooving, and irregularities of surface are well shown by this means. *H. E. Durham.*

[The prints sent by Dr. Durham were quite good and sufficient for the purposes indicated. In some of the prints of Pear leaves the venation was remarkably distinct, and in others the buds were shown prominently.—Eds. *Gard. Chron.*]

HIBISCUS.

Paradoxical as it may appear, the decline in the cultivation of the exotic species of Hibiscus synchronised with an increased public interest in the genus.

H. rosa-sinensis is the most generally cultivated tropical species, and its numerous varieties with crimson, yellow, carmine, scarlet, rose, and vermilion coloured flowers, when well grown and flowering freely, are very showy subjects for the warm greenhouse.

During the winter the plants should be rested and kept somewhat drier at the roots, starting them in a warm moist atmosphere in spring, when they may be pruned into shape. They thrive in an open compost consisting of rough fibrous loam, leaf-mould and sand. Young bush specimens may be grown in large pots, but it is when planted out and of large size that they are seen at their best.

Trained on a trellis at some little distance from the roof, where the pendant flowers swing like flaming lanterns, is an uncommon method of display.

H. r.-s. Cooperi was at one time included in most collections of stove plants. The green of its foliage is stained with carmine, crimson, olive, and white. It requires a strong heat, and a position close to the roof-glass to develop its vivid colouring.

H. Manihot, a perennial species, may be treated as an annual. Seeds should be sown in heat early in the year, and the seedlings potted on into flowering pots nine inches in diameter. Given generous treatment, this species will grow six feet high before the end of the summer, and flower continuously for several months. The large, sulphur-coloured flowers, with a dark blotch at the base of the petals, and the conspicuous staminal column, are very effective.

H. syriacus, which despite its specific name is not a native of Syria, is an old garden shrub, perhaps better known as Althaea frutex. It is quite hardy but seldom seen except in southern gardens. It is an autumn-flowering subject, and in its season of flowering brightens the shrub border with its large, brilliant blooms. The variety Meehani, with single, lavender-coloured flowers, four inches across, is one of the earliest to flower; other desirable varieties include Admiral Dewey, white, double; Coeleste, blue, single; Hamabo, blush and crimson, single; Snowdrift, single; Rubis, single, carmine, and totus albus, single, pure white. *Fred W. Jeffery.*

CULTURAL MEMORANDA.

LAYERING.

Layering is one of the oldest methods of propagation, and one which is often seen under natural conditions. It affords means of increasing the stock of many plants which are difficult to propagate by other methods.

Various methods of layering are practised according to circumstances, the principle in all methods being to adopt means to arrest the circulation of the sap on its return from the extremities to the roots. This may be achieved by cutting the stem of the shoot of the plant to be layered in a suitable position by incision, ringing, tongueing, or heeling. The part so cut, when fixed in favourable soil, forms a callus or hardening of the surface, which arrests the sap, and, after a brief period, roots are developed and the branch becomes an independent plant.

The plants that may be layered may be divided roughly into two groups:—Those possessing woody stems, such as trees and shrubs, in which cases it is generally preferable to use well-ripened shoots; and herbaceous plants having soft stems provided with leaves, in the layering of which it is advisable to remove the leaves from that portion of the stem to be layered.

The simplest method of layering is to bend the selected branch into the prepared ground, and this method may be adopted for all those plants which readily develop adventitious roots from the stem under the influence of a slight check or when kept moist. For many plants, however, a greater check is needed, hence the various methods of cutting referred to.

In tongueing or heeling, the branch is cut about half-way through by entering the knife at the lowest part of the bend below the bud and cutting upwards. The branch should be pegged firmly in such a way that the divided portions are kept open to allow of the free development of callus and roots. All buds between the main stem of the parent plant and the point of incision should be rubbed off or cut out before the branch is laid down.

Ringing, which consists in taking out a complete ring of bark from the shoot to be layered, is often practised, but care should be taken to see that the inner bark is cut through, otherwise the returning sap would pass by it to the stem, and thus the object of ringing, to interrupt it, would be defeated.

By serpentine layering, a method often practised with such plants as Vitis, Wistaria, Clematis, and Lapageria, several plants may be obtained from one shoot. The shoot may be layered at about every twenty-inches, according to the nature of the plant and the situation of the buds. Each part above ground should be furnished with one or more buds, whilst from the portion pegged below ground the buds may be removed.

A method of layering by insertion of the growing tips is worthy of experiment, as many plants will produce roots in abundance by this method. It is very easily tried, and will often be found successful in plants that one would hardly suspect this inclination existed.

The period of layering varies somewhat according to the climate and the nature of the plants. In the case of trees and shrubs it may generally be done from the beginning of spring to the middle of summer, using shoots of the previous year's growth. With regard to herbaceous plants, it is usually more advantageous to layer from about the middle of the summer onwards, as it is necessary to choose non-flowering growths for the purpose, and at this season many herbaceous plants throw up growths from the base of their flowering stems. *W. Auton.*

TREES AND SHRUBS.

TRICUSPIDARIA LANCEOLATA.

A rather "scraggy" example of this fine shrub shown at the Royal Horticultural Hall on June 10, reminded me how well the species grows in our western districts, where it is one of our finest flowering shrubs. The dark green foliage is undoubtedly a great asset to its drooping blood-red flowers, and when grown in partly shaded places the foliage retains its beautiful lustre, and is not scorched and faded as is sometimes the case when grown in full sun. It is a long way from the Island of Chiloe, off the coast of South America, to the western counties of Great Britain, but to the close observer of plants and their habits it is evident that the climatic conditions of these two widely separated countries cannot be so very different, when we find this fine shrub growing rapidly, flowering profusely, and even carrying fertile seeds here.

Some seeds saved and sown under glass in 1921 germinated freely, and the resultant plants are now nice bushy specimens over two feet high, and showing flower for the first time this season. Cuttings rooted also in that year have grown into plants of about the same height, but are not nearly so well furnished with side shoots and foliage, although they have flowered practically each year since they were put out, and are again flowering much more freely than the seedlings. A number of older plants about three feet high were planted in a shady border five years ago, and they have now reached about eight feet high, and show by their healthy dark green foliage, and their plentiful crop of flowers, that they are finding all their wants fully supplied. It may be advisable in the colder parts of the country to plant this Tricuspidaria against a wall, but here no such precaution is necessary, as the plants grow quite freely in the open. *A. T. Harrison, Culzean Castle Gardens, Ayrshire.*

ARCTOTIS ASPERA VAR. ARBORESCENS.

A most conspicuous and beautiful object in the gardens at Tresco Abbey, Isles of Scilly, is the fine plant of Arctotis aspera var. arborescens illustrated herewith (Fig. 198). The plant has completely covered a big stone or pillar to a height of ten-feet. In this way it shows to perfection its attractive flowers and foliage. At the end of May the plant bore hundreds of its pretty, brownish-white and dark-centred blooms. Unfortunately, this Cape plant is not hardy, although it flourishes in the kindly climate of Tresco. *E. Brown, Hillside, Doddington.*

COTONEASTER HORIZONTALIS.

In his always interesting "Notes from Wisley," Mr. White refers in those which appeared in *Gard. Chron.*, June 6, to the fact that this shrub, then in flower, had not so long before still borne its fruits. This is one of the great assets of this Cotoneaster, as the scarlet fruits remain untouched by birds, as a rule, and generally drop off in spring and fall to the ground.

Although by no means a rare shrub, this Cotoneaster is not so common as it should be when we consider its distinct fan-like habit of growth, the neat, though not showy pink flowers; and, last, but not least, the bright scarlet fruits, which are arranged along the branches in a fashion which would cause the uninitiated almost to think that they had been placed in the position they occupy by human intervention.

Some years ago I photographed one of these branches, which was even finer than usual with its display of scarlet fruits. Unfortunately, although the photograph was a good one, it was not suitable for reproduction and I never used it, although I believe I still have the negative. *S. Arnott.*

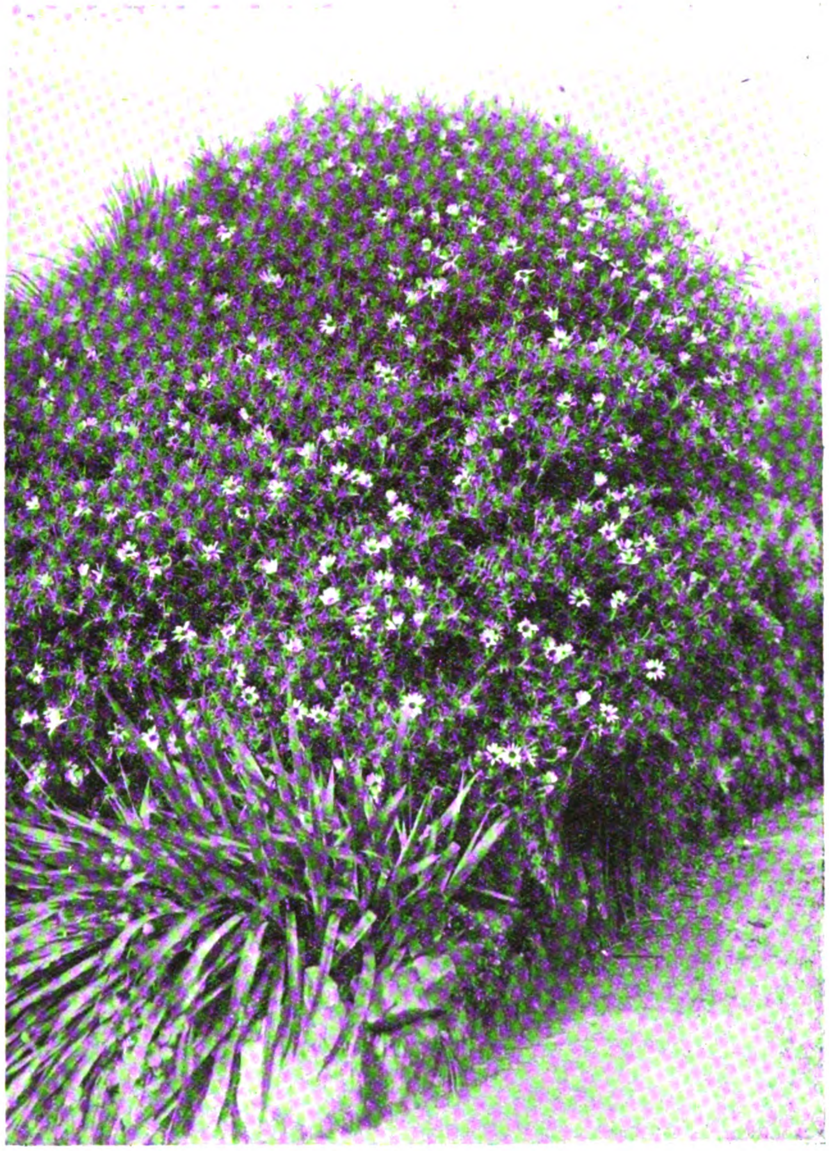


FIG. 198.—ARCTOTIS ASPERA VAR. ARBORESCENS AT TRESCO ABBEY, ISLES OF SCILLY.

LEPTOSPERMUM CHAPMANII.

This Myrtle-like New Zealand shrub is of compact growth and one of the choicest of recent introductions. Whilst probably not perfectly hardy everywhere it may be grown on a wall in most places, but it is most attractive when grown as a bush, and as such forms an object of great beauty.

Planted in a sunny position it flowers with lavish profusion, and a bush in these gardens about five feet high, is at the present time (mid-June) completely covered with its beautiful red flowers of outstanding brightness.

It is growing in comparatively poor, sandy soil and makes little growth, but flowers with wonderful freedom. *W. Auton, Pyrford Court Gardens, Woking.*

RHODODENDRON CALOPHYLLUM.

The "handsome-leaved" Rhododendron, R. calophyllum, was discovered by Booth in Bhutan, in 1850. The discoverer sent seeds to Mr. Nuttall at Nutgrove, Rainhill, where, apparently, the first flowers were produced. One specimen presented to Kew by Mr. Nuttall, flowered in the Royal Botanic Gardens in May, 1857. This Rhododendron belongs to the Maddeni group, and was figured in *Bot. Mag.*, t. 5002, September 1, 1857. The flowers are large, about three inches long and wide, pure white, with a slight tinge of yellowish-green. The coriaceous leaves are five inches or more in length, glossy-green above, and glaucous beneath in the young state, but ferruginous when the leaves are fully developed and old. The plant was discovered at a height of 6,500 feet, where it forms a shrub about three feet high.

According to Millais, in *Rhododendrons*, R. calophyllum is a variety of R. Maddenii and flowers in Cornwall in May, "but there is another form with very dark glossy leaves that always flowers in Italy." At Kew it is regarded as tender, and is now listed as a variety of Maddenii. Bean does not include it in his *Trees and Shrubs Hardy in the British Isles*; nevertheless it is handsome in flower and foliage and is a suitable companion for the many other fine "Himalayan" Rhododendrons. *C.*

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FRUIT GROWING IN THE PUNJAB.

THANKS to the foresight of the British Government and the able engineers employed, vast areas of the Punjab—once a desolate part of India—have been transferred into fertile plains, by a gigantic scheme of irrigation, namely damming the water from the mountains after it reaches the plains and directing it to various canals. The system might be compared to a huge tree, the main canal representing the trunk, the smaller canals the branches, and the gardens and farms the leaves.

Landowners and farmers long ago began to realize the commercial value of fruit production, consequently orchards have sprung up in all directions. The Patiala State, which it is my pleasure to serve, is particularly favoured by its position, being situated between the towns of Delhi on the south, Lahore on the north, Simla in the east and Batinda in the west; it has a good service of trains, is well irrigated and covers many square miles of mountain country in addition to the plains; it is therefore possible to grow almost every known kind of fruit. So splendidly situated are the valleys between Kalka and Simla that this district may well be called the California of India. It has wonderful prospects, if only the small farmers could be induced either to give up their holdings or submit to being placed under competent advisers.

The most popular fruits grown on the plains are the Mango, Orange, Peach, Nectarine, Plantain, Pomegranate, Guava, Loquat, Lichee, Fig, Mulberry, Papaya, Bael and Lime, in the order given. On the mountain sides and plateaus, Apples, Pears, Plums, Cherries, Apricots, Raspberries and Strawberries thrive remarkably well at altitudes of 3,000 feet to 8,000 feet, while Apples do very well at 10,000 feet; Gooseberries and Currants are seldom seen.

In India generally the Mango holds first place, and rightly so, for it has been grown there over 2,000 years. There is only one species, Mangifera indica. The many varieties or sub-divisions of the species differ mainly in the character of the fruit and are best classified according to shape, namely round-fruited, long-fruited, and indefinite. Seedling trees attain huge proportions and give welcome shade from the Indian sun, in addition to useful fruit. In many districts the Mangos are used as roadside trees, a practice to be highly commended, but it is only by grafting the better varieties on to seedling stocks that the best fruit is obtained. Plenty of water is necessary for the Mango, especially in the growing season, April to June. The trees are planted not less than twenty-five feet apart, as the grafted Mango seldom reaches a larger size than the average Apple tree at home. Very little pruning is necessary, but thinning and removal of all weak growth should be done after the fruits have been cleared in July. Only those who have eaten this luscious fruit can appreciate its excellence. Every Indian loves a Mango and Europeans living in India insist on getting them, as they ripen during the hottest and most trying season in the tropics.

Many varieties of Oranges are grown in the Punjab, but not to the extent they deserve. They thrive best in sheltered quarters on the plains, and when properly planted and watered sufficiently continue to grow and produce fine fruit for a hundred years and more. Most of the failures are brought about by planting the trees too deeply, thus burying a part of the stem; as with all hard-wooded plants this spells disaster, and the plants gradually wither and die, whereas if slightly elevated above the general level success is certain. The many varieties are increased and produced by grafting them on Lemon stocks. The so-called Blood Oranges are produced by grafting on the Pomegranate stock, the sap of which is of a red or blood colour. Fruiting begins at three or four years old and the gathering of the fruit usually takes place between September and January, according to the variety, after which the trees are cleared of any dead wood and relieved of all weak growth.

Peaches and Nectarines ripen during the summer months, and the best of the varieties grown at home are cultivated. I do not know anything in England quite so charming as our Peach orchards when in full flower; the trees are grown in bush form and planted in rows, about fifteen feet apart. Unfortunately the average Indian gardener or Mali refuses to sacrifice quantity for quality, therefore little pruning or thinning is done, and over-cropping is the result, so much so that one seldom sees a really good specimen fruit, not because the Indians do not appreciate large fruit, but because they are slow to learn the principles and practices which produce it. Bananas of an inferior kind are grown extensively, but the cold of occasional winters is too much for them, consequently we have to rely on Southern India for fruit of the best quality. Pomegranates are also a summer fruit and are grown extensively in orchards, planted in rows in shallow trenches fifteen feet apart, but I have frequently seen them growing wild in the mountains five thousand feet up; being plentiful, the fruit is cheap in the bazaars and much liked by the poorer classes during the hot weather.

Guavas find a ready sale and are also planted in large orchards, probably more extensively than any fruit; in fact the Guava is so thoroughly naturalised in all parts of India as to lead one to suppose it must be indigenous to the country. When well grown they reach a height of fifteen feet or more, but here again the Indians' desire for quantity is everywhere apparent, for most of the orchards are planted too thickly and consequently good fruit is impossible after the orchards have grown up.

Lichees are very popular in Northern and Central India, but they are not grown as orchard trees, which is the best method. The fruit of the Lichee is as delicious, perhaps, as any fruit in existence, and is of the size and form of a large Plum, with a rough, thin, scale-like rind, which, when the fruits are ripe on the tree, is of a beautiful red tinge, the colour of the pulp resembling the white of a plover's egg. The size of the seed stone varies considerably; for instance, if the trees are well cultivated, large fruits with small stones are produced, but if neglected and overcrowded small fruits and large stones are the result. The finest fruits I have known came from the neighbourhood of Saharanpur, and the Central Provinces, those districts being warm and more favourable for their cultivation than farther North, where frost frequently does damage in the winter months.

Figs are not so profitable in India as in less tropical countries, and although considerable numbers are to be found growing in a more or less wild state, the fruits are small and tasteless; but with proper attention in their cultivation vast improvements are possible.

On the contrary Papayas are grown very successfully by many fruit farmers, usually in orchards; the trees are planted twelve feet apart, but the fruits are not so popular as they deserve to be. Trees are easily and quickly raised from seeds, but they are short-lived, being generally useless after five years of continuous cropping. There are two main types; the male, which produces long, hanging clusters of narrow, trumpet-shaped flowers, setting no fruits; and the female, which has large white flowers and sets fruit. The difference between the two is only observable when they are in flower. This of course necessitates the growing of many seedlings to insure a good supply of fruiting plants and sufficient pollinators. Thinning the fruit is essential if quality and size are required; shade from hot sun is desirable or the fruits will scorch and split. The fruits are picked when green and should be placed on straw to ripen, the more evenly the better, in fact the even ripening of the Papaya is a subject which needs much care and study.

The cultivation of Apples, Pears, Plums, and Cherries on the mountains is little different to that which obtains at home. Most of the best varieties have been introduced and produce excellent crops; flavour, however, is lacking and often absent, particularly in Apples and Pears. This, to a great extent, is owing to the lack of sunshine, and the excessive atmospheric moisture experienced from June to September inclusive, which is usual during the monsoons, when the fruits are swelling and ripening.

Transportation of the fruit to the various hill stations is a big and expensive problem; it is usually done on donkeys or mules, which are able to climb the steep mountain roads easily.

Monkeys are the greatest enemies of the mountain fruit grower. A few of these cunning creatures will strip every leaf and fruit from a good sized Apple tree in a short time unless watchmen are in constant attendance. Their destructive powers are equalled on the plains by the thousands of mischievous green parrots.

Generally speaking, fruit growing in India is particularly interesting to an Englishman, but it is fraught with many dangers and difficulties, as may be expected. The average Indian gardener is a good fellow and ever ready to appreciate kindness and consideration, although I regret to say he is frequently looked down upon and abused. I have experienced many happy days in their company, and noted many instances of heroism, perhaps the most conspicuous being that of a "Mali," who, while cutting undergrowth in a fruit garden, was bitten on the wrist by a small but very venomous snake. To save his life he immediately cut off his hand at the wrist with his axe, and turning to the snake said, in Hindustani, "If I have to die you shall die too," and at once cut off the snake's head. *George Burrows, Garden Architect to The Maharaja of Patiala.*

BOG GARDEN.

CALTHA PALUSTRIS FL. PL.

Among our many native bog and water-side plants, few, if any, are more gloriously beautiful in spring time than the Marsh Marigold. Caltha palustris is a widely distributed species and fairly common in the western United States of America and parts of Canada, as in our own land. It loves water and sunshine and delights in rich, boggy soil, but is not quite so particular as regards soil and position as is generally supposed, indeed it may be seen occasionally in a flower border where the soil is deep and never dry.

It is, however, by the stream-side or lake-side and in boggy places that are frequently well supplied with running water, that the Marsh Marigold flourishes, producing a wealth of broadly reniform leaves which are rich light green and sometimes have entire and sometimes dentate or crenate margins. Rising above this lush foliage are the golden cups borne on many-flowered branching spikes and each flower may be two inches wide if all the conditions are favourable, but barely an inch wide if the soil is poor and the site lacking in moisture.

There is a very beautiful form of C. palustris named Tyermanii in which the plant is of rather dwarfer habit and the flowers of a fuller golden hue. A good form of the wild species is, however, sufficiently beautiful for most people, while for those who like double blooms, which are of longer duration than the single ones, there is the double form known as Caltha palustris flore pleno or C. p. monstrosa-plena. Examples of these fine Marsh Marigolds do famously by the side of a small stream, near the Japanese garden in Sir Arthur Paget's lovely garden at Warren House, Kingston Hill, where Mr. Penton grows many things more difficult to manage, but few more beautiful in their season.

HARDY FLOWER BORDER.

RANUNCULUS BULBOSUS FL. PL.

Much has been written in previous issues of *The Gardeners' Chronicle* concerning the double Buttercup, Ranunculus bulbosus flore pleno, and, later, on pp. 365, 402, and 420. A plant that flowered in these gardens in May of this year was twenty-one inches high and sixteen inches through, and carried seventy-eight flowers; it is growing in a semi-shaded position, hence its elongated growth. The flowers are borne on slender stems, which bend with the slightest movement of the air owing to the weight of the flowers, and this is its greatest weakness as a border plant. The flowers are symmetrical in form, and the central petals, i.e., the topmost, have a stripe of dark green down their centre, from top to base, but when the flower is fully expanded, the green stripe vanishes entirely and cannot be traced, the yellow colour superseding the green. I have compared the ordinary R. bulbosus with the double type and find that R. bulbosus fl. pl. is slightly richer in its colouring. The glaze or gloss upon each petal is wonderful, so much so that when examining the flowers last year I thought they were wet. This gloss upon the ordinary Buttercup appears to be greater in the shade than in full sunshine.

The propagation of the double Buttercup is a very simple matter; the plant dies down very quickly after flowering, and division can be carried out immediately, and the divisions make good plants by the next season. I do not consider R. bulbosus fl. pl. to be a rare plant in gardens; indeed, I believe R. Ficaria flore pleno is rarer. We have several plants and find the petals very glossy. My thanks for the possession of R. bulbosus fl. pl. and R. Ficaria fl. pl. are due to an old contributor to *The Gardeners' Chronicle*, Mr. C. Orchard, late of Bembridge, Isle of Wight. *Mark Mills.*

—— There have been one or two very interesting letters in *The Gardeners' Chronicle* recently concerning this plant, and it may be of interest to record that my wife found it growing wild, a single plant, in a meadow at Little Wymondley, Hertfordshire, eight or nine years ago. We dug it up, and I have grown it in my garden ever since then, though it has had a great many narrow escapes from being dug up as a weed when out of flower. It produces perfect, double flowers, but has never thrown the small flowers described on 402, as being figured by Parkinson.

This double Buttercup, a very ornamental plant and well worth growing, though I must confess I have never increased it to any great extent. The bulbous root throws out a goodly number of offsets, and these I have occasionally separated and given to my friends.

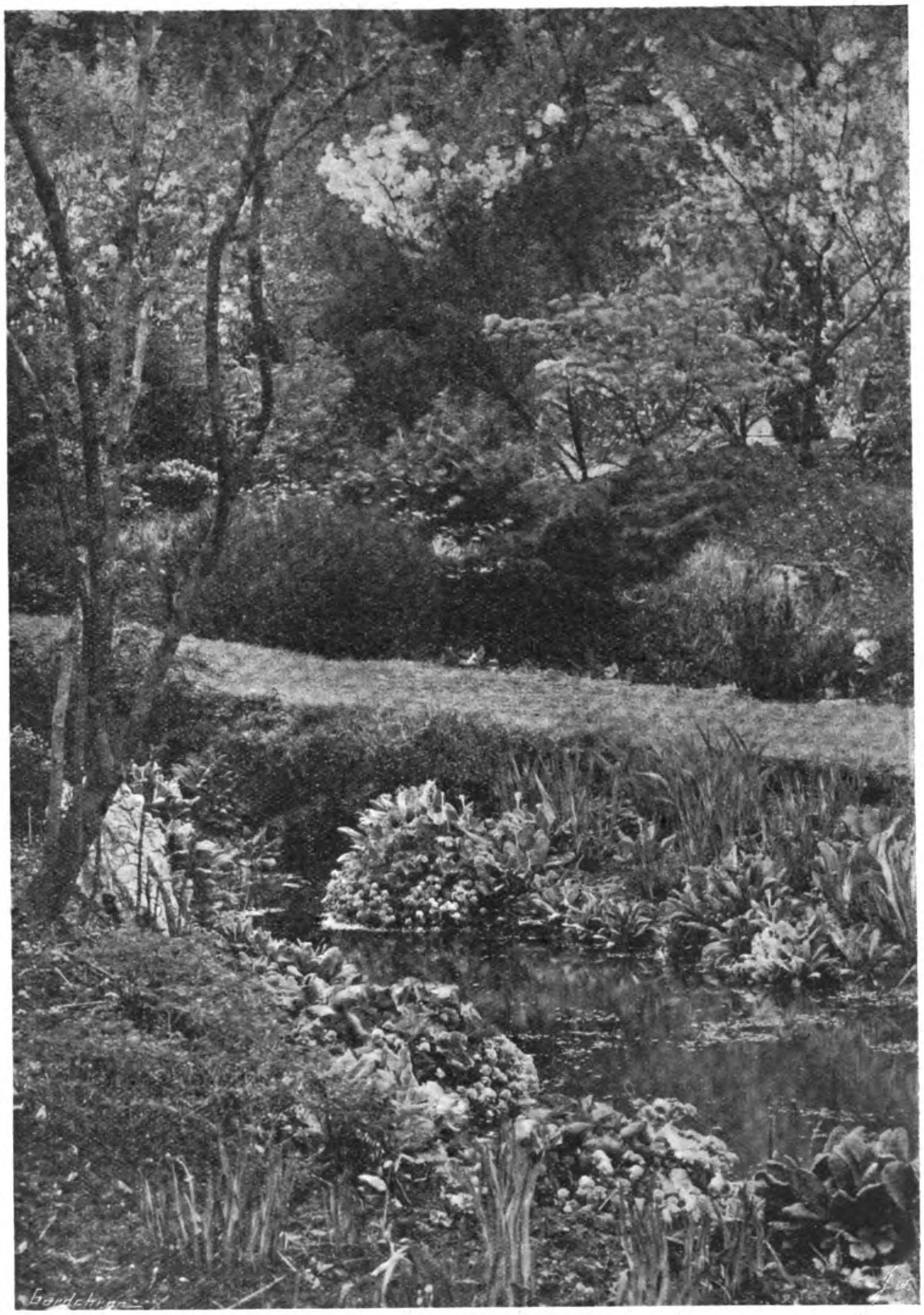

FIG. 199.—DOUBLE MARSH MARIGOLD (CALTHA PALUSTRIS FL. PL.) AT WARREN HOUSE, KINGSTON.

The Ranunculus family seems very prone to doubling, for we have the old double forms of Ranunculus asiaticus, which were so much in vogue eighty or ninety years' ago, and in view of their great beauty are all too little grown to-day.

Then, in fairly general cultivation, are the double Meadow Buttercup, Ranunculus acris flore pleno, two feet high and very pretty with its numerous little golden, button-like flowers, and an even more beautiful plant which is becoming rather scarce of late years, Ranunculus aconitifolius flore pleno with beautiful sprays of dead-white, double flowers. This is excellent in rich soil for the border or water side, though it has not, perhaps, the airy grace of the wild single form.

I grow here a plant which I imported from the Continent as Ranunculus speciosus flore pleno, and this seems quite distinct from my double R. bulbosus. The flowers are of a deeper gold, almost orange colour, and the habit is more erect and compact than in R. bulbosus.

Then we have a double Ficaria or Celandine, near relative to the Buttercup, in the same Natural Order; several double forms of Anemone Hepatica, as well as Anemone sylvestris and Anemone nemorosa. I should be very interested if anybody could tell me what is the true and correct name of the plant commonly known as Ranunculus speciosus flore pleno.

I was once given a plant of Ranunculus repens flore pleno, but this at once proved itself such a terrible, creeping, land grabber that I took fright and did away with it. *Clarence Elliott, Six Hill Nurseries, Stevenage.*

SAXIFRAGA PELTATA.

APART from the interest attached to it as being the only member of the Peltiphyllum group of the genus, the Californian Umbrella plant is sufficiently handsome and distinct to merit a position in any collection of hardy perennial plants.

While not fastidious as to soil or situation, it attains its maximum development in rich, moist loam, and a semi-shady spot, forming waving tangles of bright green foliage on stems a yard high.

It flowers in early spring, before the leaves appear.

The wide heads of pale pink flowers are borne on long, thick, hairy stems, springing from the tip of woody rhizomes. The clusters of leaves develop from lateral buds at the base of the flower stems. *Fred. W. Jeffery.*

PAPAVER RUPIFRAGUM.

POPPIES are generally favourite flowers, but the perennial species seen in average gardens are not numerous, and at present the varieties of Papaver orientale appear to be the most popular. Yet some of the others, although of less striking effect, are deserving of notice, and among them I should be disposed to place Papaver rupifragum and its variety (a distinct species of some) P. r. atlanticum. For garden purposes these two Poppies may be ranked as practically synonymous, although the latter has slightly different leaves and has the buds clothed with hairs, while in the type they are bare and glaucous. In general appearance they are identical in the border.

R. rupifragum grows about two feet high; has deep green, lobed or toothed leaves, and slender, naked stems bearing a single flower of salmon or brick-red and less than half the size of P. orientale. Like most members of the race, it seeds with great freedom and self-sown seedlings appear in abundance, although not to such an embarrassing extent as those of Meconopsis cambrica. The flowers are rather thin in substance, but have a share of the crinkled appearance which adds to the beauty of the Poppy in general. *S. Arnott.*

GILLENIA TRIFOLIATA.

WHEN planted in groups of from six to twelve plants, the delicate rosy white flowers of Gillenia trifoliata are loosely arranged in terminal or axilliary panicles on graceful stems, furnished with handsome trifoliate foliage of a fresh green shade. It is an admirable subject for the border or shrubbery.

ARMERIA RUBY.

THE common Thrift or Sea Pink is frequently used as an edging to borders. It is a very easily grown plant and thrives practically under any conditions. One of the most showy hardy border perennials in flower at the present time, and one that will continue in bloom for some considerable time is the variety Ruby. This Thrift produces an abundance of globular-shaped heads of rich deep rose-coloured flowers, on stout, wiry scapes from one-and-a-half foot to two feet high. As a border plant it is unique, perfectly hardy, evergreen, and well adapted for growing in the mixed herbaceous border.

VERONICA AMETHYSTINA.

BECAUSE of its delightful, pyramidal spikes of amethyst-blue flowers, this hardy plant should be included in all herbaceous borders. It produces myriads of flowers on stems one-and-a-half foot to two feet high, and is exceedingly effective either in the border or in the rockery. The plant is perfectly hardy and flowers from May to July. *W. Logan.*

ALPINE GARDEN.

VERONICA FRUTICANS (SYN. V. SAXATILIS).

WHEN this delightful plant is in bloom at about the end of May, it has no rival among Alpine Speedwells. It may not be more beautiful than the old V. rupestris (Teucrium dubia) telephifolia, satureioides or even V. Chamaedrys, but it has, nevertheless, a charm of its own that is rare and refined.

V. fruticans is one of those plants which merit a "close-up" position, so that one may look into the individual flower and mark within those stars of intensest royal blue the white eye, with its wonderful crimson iris and light golden anthers. No spring rock plant deserves a choicer place than this Speedwell, and in spite of a reputation for "miffiness" in some gardens it is not difficult in any free, gritty soil with full exposure. Even when it grows with the greatest freedom it does not become a big plant, the semi-decumbent, slender stems not often exceeding about six inches in length.

There is a white form of V. fruticans worthy of the type in every way and a good companion plant for the latter. Then there is V. fruticulosa, which Farrer claimed to be no more than a variety of V. fruticans. This, however, is a bolder, bushier, taller plant, the more upright stems, with their oval, hairy leaves, tapering into spires of pink flowers veined with a darker shade of the same colour. This, also, is an admirable Speedwell and one likely to prove easier than the type in gardens where the latter is not a success. *A. T. J.*

GEUM BORISII.

THE now well-known G. Borisii has evidently come to stay, for its orange-scarlet flowers are very effective in the garden. Native collectors regard it as a hybrid, namely, G. reptans × G. bulgaricum. It was found by J. Kellerer, who gave it the name it now bears, in 1906. Kellerer found it on Mount Rilo in Bulgaria. The plant near it was G. reptans, a species that is widely spread in Europe, where it affects high alpine regions, in different countries ranging between 5,000 feet and 10,500 feet. It is a beautiful species with large, yellow flowers, but has runners four inches to twelve inches long. G. Borisii is considered to have taken the large leaf form of G. bulgaricum, which has very large leaves under cultivation, but has only bright yellow flowers. The drooping flowers of G. Borisii are described as brilliant yellow, and most likely sterile. The various plants that have appeared in this country are described as having brilliant orange-scarlet and brilliant fiery orange-scarlet flowers. Dried specimens of the true G. bulgaricum give the impression of pale yellow flowers, but this may be due to loss of colour in the drying process, otherwise it would be difficult to account for the hybrid having orange-scarlet flowers. *J. F.*

NOTICES OF BOOKS.

GLADIOLI.*

GARDEN races of Gladiolus of recent origin are well worthy of a place in any garden. The old kinds which, like the newer, are for the most part of hybrid origin, are beautiful also, albeit in a more effulgent way. They had a rigidity of habit and a magnificence of colouring which imparted to the flower all the garden virtues except perhaps that of grace. With the introduction of Gladiolus primulinus by Mr. Francis Fox less than twenty years ago, the one thing lacking was imparted to the Gladiolus of the garden, and now no more beautiful nor more graceful flower is to be found than the hybrid Gladioli with primulinus blood in them. It is at first sight surprising that a native plant of a semi-tropical region should lend itself so kindly to cultivation and hybridisation in this country, but if recollection serves, Mr. Fox once informed us that he found P. primulinus growing in the spray of the Zambesi falls; evidence that, although a native of a hot part of the world, the species enjoys cooler conditions than those to which it would be exposed were it to grow in the more open places of its habitat. Gladiolus primulinus has, as is well-known, imparted to the hybrids in the parentage of which it has played a part a dual gift of gracefulness—grace of form and of colour. The magnificent but often hard colours of the older hybrids—for example, of the gandavensis kinds—are softened to lovely tints. The effect, no doubt, is due to the persistence of the Primrose-yellow colour of the species in the hybrids, with the consequence that the full sap colours introduced by the other parent are softened by the background of yellow. The gracefulness of form, due to G. primulinus, is manifest in the more slender, somewhat bending flower spikes, which no longer, as in the older varieties which knew not G. primulinus, are stiff and somewhat over-sturdy. With so many beautiful garden races—both old and new—it is no wonder that the popularity of the Gladiolus is great and constantly growing.

The versatility of the plants is shown by the fact that they do as well—or better—in America than with us, and, indeed, so popular is the Gladiolus in the United States that a special society exists to encourage its cultivation. With a similar and most commendable object, Mr. Macself has written for the "Home Garden" series a book on the Gladiolus, the excellence of which is bound to augment the already great popularity of the plant.

Among the many virtues of the Gladiolus, ease of cultivation is certainly one, and another ease of propagation. There are not many plants which produce offspring in such quantity. So early as 1834, as Mr. Macself points out in his remarks on the history of the Gladiolus, a correspondent in *The Floricultural Cabinet* who had planted three "roots" of G. psittacinus expresses astonishment that from them he obtained on lifting five good corms and an extraordinary number of small ones, ranging from the size of Hazel Nuts to that of grains of Wheat. Anyone who plants Gladiolus may be sure that though he lift the corms never so carefully young plants will appear next year from the spawn left in the ground. As Mr. Macself points out, the modern Gladiolus of gardens is a plant of very mixed parentage. Although the hybridiser did not begin very easily to cross species—the first recorded hybrid is that figured in Robert Sweet's *British Flower Garden*, 1833—he has gone on with persistence and success ever since. The note accompanying this illustration states that the hybrid was raised by that distinguished gardener, the Hon. and Rev. William

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* *Gladioli.* By A. J. Macself. Thornton Butterworth, Ltd. Price 6/- net.

Herbert, and that it—named G. pudibundus—was believed to be derived from a cross between G. cardinalis and G. blandus. The former seems to be a good species, but G. blandus is an old garden plant, in itself very variable, as anyone may see who will consult and compare Figs. 625 and 645 in the *Botanical Magazine*. Whatever its origin, Herbert's hybrid proved both ornamental and fertile. Its flower is shown in t. 610 of the *Botanical Magazine*, and the note accompanying this illustration describes it as a "free blower, very ornamental, and propagates with ease from both seed and offsets."

Besides G. cardinalis and G. blandus, G. psittacinus, resplendent in scarlet and yellow and valuable because of its late-flowering, long ago joined in the syndicate of species which have produced modern races of garden Gladioli. It was undoubtedly one of the parents of the gandavensis hybrids, though what was the other is less certain. Judging from their promiscuousness, there may have been more than two species involved in the begetting of this wonderful race. From gandavensis races, M. Lemoine raised his well-known Lemoinei and Nanceianus hybrids, using for this purpose the species G. purpureus-auratus, a remarkable native of Natal, distinguished by the pale, golden-yellow colour of its flower. Natal, also, is the home of G. cruentus, a more magnificent G. cardinalis introduced, according to *The Gardeners' Chronicle*, in 1868.

Those who are interested in the genus from the exhibition point of view will read with much interest Mr. Macself's judicious appraisement of the points to be regarded. So far as planting is concerned, the author recommends planting in October for early flowering, at a depth of three-inches, coupling with these directions the recommendation to surround the corms with sand and to cover with litter at the approach of frost. As to preparation of the ground, Mr. Macself recommends digging in manure in August, sowing a green crop of Lupins, Tares, or Mustard, digging the crop in before the winter and leaving the land rough until the spring.

Rock Gardening.

THE useful series of "Half-crown Garden Books" published by Country Life, Ltd., deals with a variety of subjects, and one before us, on rock gardening,* is from the pen of Mr. Walter Irving, whose knowledge of the subject is unrivalled, for he has for many years had charge of the very extensive collection of alpines cultivated in the Royal Botanic Gardens, Kew. In a work of less than sixty pages he has had, necessarily, to condense his subject somewhat severely, but he has made the most of the space at his disposal, and the information he gives will serve as a guide to all who are interested in this particular phase of gardening.

In the opening chapters he deals with the selection of a site for a rock garden, materials for its construction, the cultivation and soil most suitable for alpines, and the alpine house and frames.

The chapter on the cultivation of soils is especially useful, for many of the failures with alpines may be traced to growing them in an unsuitable rooting-medium, and he very wisely advises the provision of a considerable depth of soil for alpine plants, for the roots of most alpines travel a long depth in search of suitable food and moisture. His advice on planting alpines is also valuable, for it is only after long experience that the grower finds out the best time to do this, as some need to be planted directly after flowering is over, others in spring and still others in autumn.

Mr. Irving recommends all who attempt the construction of a rock garden to arrange the rocks in a natural style and not to use too much stone. The old style of a heap of soil thickly studded with stones poking out, in what one of the cleverest writers on alpine gardening has described as the almond-pudding and the plum-bun systems, is never found in nature, and the most successful rock gardens are those which possess "a variable and broken surface, consisting of bays, ledges and crevices with prominences that give shelter and shade to such plants that require it."

The greater part of the book is devoted to a list of plants for the rock garden and the principal families dealt with are Acantholimon, Achillea, Adonis, Aethionema, Alyssum, Androsace, Anemone, Campanula, Cyclamen, Dianthus, Erodium, Gentiana, Primula and Saxifraga.

Several excellent illustrations are included, and a study of these will give a better clue to the proper disposition of alpines on rockeries than any amount of text.

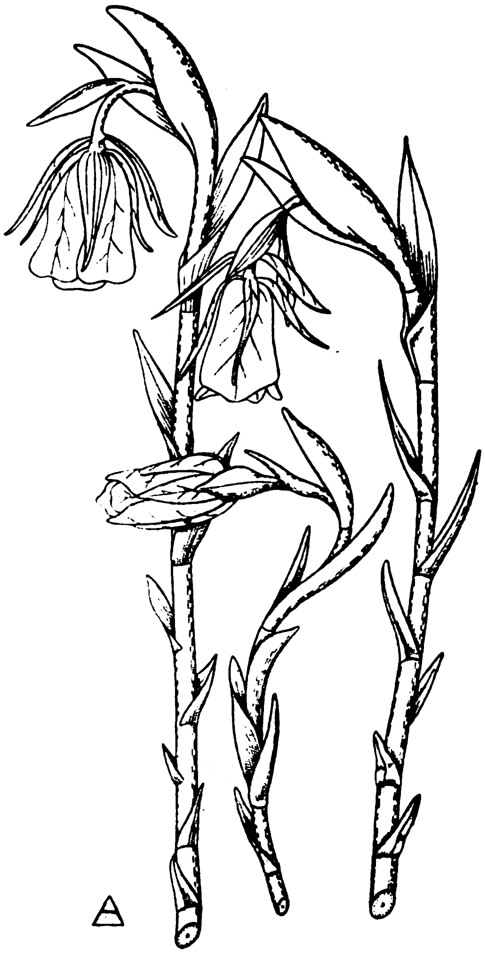

FIG. 200.—MONOTROPA UNIFLORA.

MONOTROPA UNIFLORA.

THIS plant (Fig. 200), known as Indian Pipe, belongs to the Erica or Heath family, the genus consisting of only two species, which are found distributed over most of Europe, Northern Asia, and North America. One species, M. Hypopithys, is found in woods in this country near the roots of Fir and Beech from Westmoreland southwards. It has a drooping raceme of brownish-yellow flowers. M. uniflora is a native of North America, but is also found in Japan and in the Himalayas. The scale-covered, white scapes, four-inches to ten-inches high, are produced from a mat of brittle roots, and bear single, nodding flowers with white petals. Both are curious and interesting plants, but as they are saprophytes, feeding on decayed vegetable matter, cultivation is somewhat difficult. The American species is sometimes wholly pink or red. It flowers from June to August. *W. I.*

APPLE-LEAF SCORCH.

SINCE Dr. Durham has discovered that the argument by which he finally ousted potash as a factor in the problem of leaf scorch was based on a reference shown only to refer to Barley, he has set forth further arguments in articles in your issues of April 25 and May 30, by which he again ousts potash to his satisfaction.

Several points arise in these articles upon which I should like to make comment.

Thus, in the article of April 25, page 258, a strong point is made of the fact that in the Long Ashton pot trials "the potash is exhibited as sulphate." Since no portion of the potash is applied in the form of sulphate* this portion of the argument is as unconvincing as the previous one.

Again, data relating to the potash content of the fruits, branches, roots, etc., of the Apple and Pear, are presented, from which it is suggested that the Pear has greater potash needs than the Apple. In the very earliest days of soil chemistry, Liebig, after carrying out analyses of various agricultural plants, concluded that the Turnip, which he found to contain a low percentage of phosphates, would require a very small amount of phosphatic manuring for its development.† This view was shown by Lawes to be erroneous in practice, and to-day phosphates form the basic dressing for the Turnip crop, and quite rightly so.

Then in the last paragraph dealing with "restoration to health by supplying the wanting factor," if Dr. Durham wishes to see leaf scorch overcome in a very simple manner in the case of our leaf-scorch plants in pots, I shall be pleased to demonstrate a very simple potash method to him.

Turning next to the article of May 30, p. 372, there are several points which appear to be unsound. In the first place tree requirements based on removal data are given to show the amounts of nitrogen, phosphoric acid, potash, and lime, which are removed by Apple trees during growth. I assume that the analyses were made on trees growing out of doors, since data for an adult tree are given. Before finally assigning a value to such analyses I would ask Dr. Durham to carry out a few experiments to determine the extent to which rain can wash out ash constituents—especially potash—from the foliage of Apple trees. As a starting point in such an investigation I would ask him to look up the following reference: (*Year Book*, U.S. Dept. of Agric., 1908, page 389). The article will be found to be most illuminating. Data are presented in it of amounts of nitrogen, potash, lime and magnesia removed from growing crops by rain and dew and it is shown that data such as those quoted for Apple trees do not represent the amounts absorbed by the plants but the amounts absorbed less the amounts washed out by rain and dew. Similar results have been obtained at Long Ashton in experiments on the effects of leaching with water on the foliage of the Apple, in which special attention was given to the removal of potassium compounds. An account of these experiments will appear shortly in *The Journal of Pomology*.

Even if such analyses had any value in showing the amount of food absorbed by the Apple, I scarcely see the point of the argument "that the Apple trees grown in the experiments at Long Ashton have no chance of obtaining the essential elements in normal form" because the ratios of these in the nutrient solution are not identical with the ratios found in the tree. Is Dr. Durham propounding the theory that Apple trees can only take in the essential elements in normal form when available in these ratios?

I should be obliged for the reference

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* *Rock Gardening*. By Walter Irving. The Half-crown Gardening Book series. Country Life, Ltd., 20, Tavistock Street, Covent Garden, W.C. 2.

* *Annual Report*, Long Ashton, 1921, page 44.

† *Soil Conditions and Plant Growth*. E. J. Russell, 1912 Edition, page 12.

giving the information "that normally potash is absorbed in the form of carbonate or perhaps some organic combination." I trust the reference will be a recent one. I should also welcome the views of experts on this point.

I disagree entirely that such a view is held either by plant physiologists or soil chemists, as the modern view held by such workers is that the plant absorbs its "potash" in the form of the potassium ion. This being so, there is no reason why the trees in our pot experiments should not absorb the "potash" in normal form.

I should also like to point out that present-day plant physiologists, since they hold this view, use the methods of water culture and sand culture in fundamental studies on the absorption of the essential food elements by plants.

For examples of the use of the sand culture—nutrient solution method to the nutritional problems of Citrus trees see the publications of Reed and Haas—University of California *Expt. Station Bulletins.*

The nitrogen/potash ratio referred to in the 1923 Report is obviously a nitrate, nitrogen/potash ratio since nitrogen is only applied in nitrate form. I would look at this ratio in practical work in rather a different way from the very crude method suggested by Dr. Durham and would warn growers that there is a real danger of leaf scorch resulting from nitrogenous feeding of trees on soils on which crops are known to respond to potash dressings unless potash manures are also regularly applied. (See later in this article *re* Hutton Experiments).

Work on this point is at present in progress at one other Research Station in this country—both in sand and soil culture—and the results of these experiments are in complete agreement with those obtained at Long Ashton.

Regarding the statement "that rain water should not contain more potash than all the blood of existing dodos . . . etc.," it is obvious that no thought has been given to the usual methods of collecting rain water in bulk and to the possibility of contamination which may result from such methods. In point of fact, the potash content of the water used has been determined from time to time and has been of the order of 0.25 parts per million.

I admire the courageous manner in which Dr. Durham is prepared to compare and contrast the available potash of soils of different types and to draw his conclusions rigidly from these. I would recommend a little investigation of the subject as the surest way of ridding himself of such ideas. In fact, consideration of the statements on "available potash" made by Dr. Durham in these articles leads one to the conclusion that he will have to amend his ideas very radically on the "needful available limits." He would do well to commence the process by studying the modern views on base exchange in soils.—See account of discussion held by the Faraday Society on *Base Exchange in Soils.* Dec. 9, 1924.

Again, the statement "that leaf scorch at centres A. and F. has 'practically disappeared'—not entirely be it noted—etc." appears to show a lack of appreciation of the problem of curing the trees in a leaf scorch plantation. In such plantations where the trees are fairly old there are always certain of these which one cannot hope to cure. At the centres to which reference was previously made and where leaf scorch has "practically disappeared since potash has been applied," previous to treatment. the majority of the trees were in a crippled condition due to leaf scorch, whereas now the trees are bearing healthy foliage and carrying crops.

In view of all the points which have been advanced in these discussions to endeavour to show how the results obtained in our pot experiments have all been due to the abnormal conditions of pot culture, it will be of interest to readers to know there are two controlled field experiments in progress at present in which the action of potash manures in controlling leaf scorch in the presence of both carbonates and humic matter can be seen.

The first of these is in a manurial experiment on Gooseberries which has been in progress at Long Ashton since 1921. The soil is a light sandy loam, though containing a fairly high total potash—0.52 per cent. When the bushes were planted out in 1921, leaf scorch appeared over practically the whole of the area.

The following differential treatments have been continued over this area on plots one-sixteenth of an acre in area since that time:—

1.—Control—No manure.

2.—Dung at 10 tons per acre—applied each spring.

3.—Nitrate of soda 3 cwts.; superphosphate 4 cwts.; sulphate or muriate of potash, 2 cwts. per acre—applied each spring.

4.—Dried blood containing nitrogen equivalent in amount to that contained in 3 cwts. of nitrate of soda; bone flour (containing phosphoric acid as in 4 cwts. superphosphate): sulphate or muriate of potash as in 3.

5.—As in 3—less nitrate of soda.

6.—As in 3—less superphosphate.

7.—As in 3—less potash manure.

As the result of these treatments the bushes receiving the treatments "no manure" and "potash omitted," i.e., plots 1 and 7, are stunted in growth and every bush is affected with leaf scorch each summer. whereas the bushes on all the other plots are making healthy growth and have ceased to show signs of leaf scorch.

The second is in a manurial experiment on Apple trees which has been in progress at the Lancashire County Council Horticultural Station at Hutton, near Preston, since 1911. The soil at this centre is a heavy soil which would not generally be expected to react to potash manuring. The available potash is given as 0.018% in 1911.

Here, trees fed annually since planting with nitrate of soda at 1½ cwt. per acre have remained stunted and scorched and are loose in the ground. Others fed with phosphates and potash in addition to nitrogen or with dung have made excellent growth and show only a trace of leaf scorch each year. Another group fed with dung + sulphate of ammonia show more scorch than those fed with dung alone whilst others fed with dung and sulphate of potash have remained entirely free from leaf scorch.

Needless to say we should welcome a visit from Dr. Durham to Long Ashton any time in July or August to see the plots in which the ousted potash is playing so valiant a part in controlling leaf scorch and I have no doubt that he would be given a hearty welcome to Hutton. The results at this latter centre would provide him with excellent material for reflection on the nitrogen/potash ratio. *T. Wallace, Long Ashton Research Station.*

Since writing the above article I have read the interesting note of Mr. Cecil Hooper in your issue of June 13, page 419, referring to results obtained in manurial experiments on Apples, etc., at Wye College. This is apparently another case in which feeding with nitrogenous manures without ensuring an adequate supply of potash—thus producing a wide nitrogen/potash ratio—has resulted in leaf scorch and serves to emphasise the point made by us that there is a real danger of leaf scorch resulting on certain types of soil from such systems of manuring. *T. W., Long Ashton, Bristol.*

HARDY FRUIT GARDEN.

DAVIDSON'S COMPOSITION.

READING some comparatively old tattered pages on fruit culture by an author who is unknown to me I found a reference to "Davidson's dressing" for application to fruit tree boles as a preventive of rabbits, and its reliability for the purpose. So many highly lauded unctions to this end have been tried thoroughly and proved reliable only in their unreliability that my vote and the votes of many others go to small-meshed wire netting; I therefore remained unimpressed, notwithstanding the absolute soundness of the cultural advice given. Nevertheless, my curiosity was roused and many inquiries went to friends, but without reward to date. In the meantime books were searched and a solitary reference was found in the second edition of Miss Ormerod's *Manual of Injurious Insects* (page 264), which reads, "I refer here to Davidson's Composition, made according to the original recipe, which so far as I am aware, is procurable only from Messrs. Dickson and Sons, Newton Nurseries, Chester. Since the first edition of my manual was published, I have been given to understand that a slightly altered form of the composition has been issued, which very possibly may answer as well as the above, but I am not myself acquainted with it." This comes in a footnote to the remarks on Pine Weevil, about which I know nothing. Mention weevils to Apple growers, however, and they commence to anathematise the Apple blossom weevil, and I was intrigued instantly. What was Davidson's Composition? Would it be of practical value in Apple blossom weevil attacks? Probably not. as Miss Ormerod makes no reference to it under that head. Turning to the *Horticultural Directory,* I found "Dickson's Ltd., Chester," but no Dickson and Sons, Newton Nursery, Chester. Will one of the knowledgeable fruit men of *The Gardeners' Chronicle* tell me what Davison's Composition is and particularly its value, if any, against Apple blossom weevil? *H. J. W.*

HOME CORRESPONDENCE.

Ixiolirion Ledebouri.—*L.*, on p. 413 draws attention to Ixiolirion tataricum, and I agree with all he writes about its utility for cutting and as a border plant. Light soil and a warm position seem essential factors for its well-being. May I add that I find it an excellent subject for growing in a cool or even a cold greenhouse. The protection enhances its beauty, especially if it is used as a cut flower. When I obtain a few I. tataricum I generally get a few I. Ledebouri as well in order to prolong the season. Many think there is no difference between I. Ledebouri and I. tataricum. They are very similar, I must admit. but true I. Ledebouri flowers ten days before I tataricum, hence the wisdom of buying both, especially if they are wanted for growing under glass. Ixiolirions are usually called "Lily-like," but ever since a dear old lady said of a vase full in my study, "What have you there? Why I declare they are blue Freesias!" I think of them as more Freesia-like than Lily-like. *Joseph Jacob.*

Hay Fever.—In reply to your correspondent's enquiry on p. 441 for a remedy for hay fever, Dr. E. Ritserts' Rhinoculin-Cream gives great relief. It may be obtained from Messrs. Scott, Warner & Co., chemists, 55, Fore Street, London, E.C. 2, who are sole agents, price 3/- per tube. *H. Hanchet, Bankholme, Woodcote Valley Road, Purley.*

An Operation on the Standard Rose.—I was greatly interested in reading the account by *W.* on p. 440 of how his medical friend successfully set the "leg" of one of his standard Roses. Possessing no medical knowledge myself, I was called upon to perform a similar operation about eight years ago, as two standard Rose trees had their heads blown almost off, the only attachment being a very small piece of bark. One Rose was General MacArthur, and the other Madame Ravary. My appliances were those a gardener uses at such times; clay and old rubber hose pipe. The clay was moistened and worked into a putty-like paste and then, after the stem had been set into position as nearly as possible, the clay was placed round the wound, the piece of rubber hose split open and then put around the clay and fastened top and bottom to keep the whole in position. One of the Roses is still alive and in good health. The other survived, but met with a worse accident two years ago, when its head was blown off entirely. So *W.* and his medical friend need not despair. Had the accident happened at the end of October it might have been a different matter, as the sap flows more freely in spring. I have carried out similar operations with other trees, in early summer, with success. *Isaiah Johnson.*

Salads.—In olden times it was said that salads "purified the blood." Our ancestors could not have explained in scientific language what this meant, but they knew from experience that people suffering from blotches, and blains and boils, and skin eruptions were benefited by taking salads instead of meat. Now-a-days we talk of "vitamines" in the sap and green leaves of our salads and in the juices of our fresh fruits, and so we think we understand the scientific reason for our grandmothers' advice. Now is the time to put this teaching into practice. Look in the meadows of the land and there will be seen horses grazing with coats of velvet, and cows fully favoured and shining in sleek and radiant happiness. This beauty of skin and hair they get from the fresh herbage of the meadows. This is one of the secrets of the salad. Eaten all the year round it will improve the complexion and give beauty to the skin and sheen to the hair. In order to get the best results from salads they should not be eaten with meat. The proper course is to give up flesh foods during the summer, and to take a dietary of fruits, nuts, cereals, milk, butter, cheese and honey, and to add salads with a salad dressing of oil to every meal. People, too, often have an idea that "salad" means merely Lettuce and Cress, whereas the ways of making salads are infinite, and the ingredients are extremely varied, the different kinds being obtainable all the year round. If your readers have any difficulty in getting one of the many handbooks published on the subject they may always apply to the Fruitarian Society for assistance. *Josiah Oldfield, Margaret Manor, Sittingbourne.*

Apple Scab.—It has been demonstrated a good many times that both Bordeaux mixture and lime-sulphur are capable of reducing damage from Apple Scab, but I have never before heard of a case in which either made an absolute clearance of the disease, as claimed by Mr. Geo. H. Copley on page 439. I have sprayed with one or other of these fungicides every season for many years, but never with complete success, and not infrequently with more or less injury to certain varieties. Unless Mr. Copley left some trees unsprayed as a control, I think he ought to attribute his good result partly to luck. Such things do occur in fruit growing, and when you try the same treatment again you meet with failure. It would be interesting to know whether his trees are still free from scab, for in many cases this season the disease did not develop to any extent until early June, then it spread badly. *Market Grower.*

SOCIETIES.

ROYAL HORTICULTURAL.

June 23 and 24.—Delphinums, Roses, and Sweet Peas were particularly well shown, and these with other seasonable flowers made a very bright and effective show. Orchids were more numerous than a fortnight ago, and the several collections included interesting and valuable plants. Vegetables were not represented, and although Strawberries were intended to be a special feature of the meeting, the exhibits were noteworthy for quality and not quantity. A great many novelties were placed before the Floral Committee, but only a relatively few received award.

Orchid Committee.

Present: Sir Jeremiah Colman, Bart. (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. A. Dye, Mr. J. Wilson Potter, Mr. C. J. Lucas, Mr. Fred K. Sander, Mr. J. E. Shill, Mr. Charles H. Curtis, Mr. A. McBean, Mr. J. C. Cowan, Mr. T. Armstrong, Mr. Stuart H. Low and Mr. H. T. Pitt.

Award of Merit.

Laelio-Cattleya Beatrice de Herriard (*Cattleya Veiris* × *L-C. Ettrick*).—A pleasing hybrid in which the sepals and petals are pale greenish-yellow and the stiff lip is deep violet-purple, edged with greenish-yellow and with golden veins in the orange-red base and throat. Shown by Mrs. Beatrice Jervais, Herriard Park, Basingstoke.

Preliminary Commendations.

Odontoglossum eximium var. Gatton Triumph (*O. crispum Solon* × *O. ardentissimum*).—The flowers are white, with a dark red-brown lip and roundish blotches of this colour on some of the other segments.

Odontoglossum Lady Holmden (*O. Lord Pirrie* × *O. Amethyst*).—In this hybrid the flowers are chocolate coloured, with white markings and margins and a white apex to the lip. All the margins are wavy and slightly fringed.

Odontoglossum Lady Colman (*O. Lambeauianum* × *O. V.C.*).—A large flower with heavy, chocolate-red markings on a blush-white ground. The flat lip is white with dark red-brown markings at the edge and base.

The three foregoing Orchids were small plants and with the exception of the first, carried only one flower. They were shown by Sir Jeremiah Colman (gr. Mr. J. Collier), Gatton Park, Reigate.

Groups.

Messrs. Sanders had a capital exhibit in which the plants were disposed so that each could fully display its charms. Prominent plants were those of Dendrobium thyrsiflorum, one carrying a dozen of its pendant spikes of yellow and white flowers; Thunia Marshalliana, T. Brymeriana, Phalaenopsis Rimestediana, Brassia verrucosa, Laelia Pacavia, the handsome Cattleya Thurgoodiana, the blue-flowered Dendrobium Victoria Reginae, the albino Cypripedium Curtisii var. Sanderae, Oncidium Papilio majus and a few small-flowered species of botanical interest.

Messrs. Stuart Low and Co. had a small display. It contained some fairly large plants of Cattleya Mossiae and C. gigas, besides examples of the quaint Oncidium phymatochilum, Phalaenopsis Luddemanniana, the sensitive lipped Bulbophyllum barbigerum, Odontoglossum Williamsii and Miltonia vexillaria in variety.

Floral Committee.

Section A.—*Present:* Messrs. H. B. May (in the chair), E. R. Janes, Donald Allan, Andrew Ireland, M. C. Allwood, J. B. Riding, D. Ingamells, Chas. E. Pearson, G. W. Leak, F. Streeter, Arthur Turner, H. J. Jones, and W. D. Cartwright (Secretary).

Section B.—*Present:* Mr. C. T. Musgrave (in the Chair), Sir William Lawrence, and Messrs. W. J. Bean, R. Wallace, F. G. Preston, T. Hay, Reginald Cory, Amos Perry, G. Harrow, Gerald Loder, R. D. Trotter, and W. B. Cranfield.

Awards of Merit.

Rose Dame Edith Helen.—This handsome exhibition-sized H.T. Rose was in particularly fine condition, and surpassed the blooms shown at the N.R.S. spring show. In addition to being of large size, the blooms are of full habit, very shapely, and of a pleasant, medium shade of pink. Shown by Messrs. Alexander Dickson and Sons.

Rose Else Poulsen.—A valuable dwarf Polyantha variety which we admired last year in a collection at the Regent's Park show. It appears to be very free flowering and of compact habit. The single flowers are three-inches across and have a particularly attractive, wavy outline. The colour is a clear pink, slightly deeper in shade on the margins of the petals. The cluster of stamens is unusually small. Shown by Messrs. D. Prior and Sons.

Rose Marcia Stanhope.—A lovely H.T. Rose which received the Gold Medal of the National Rose Society at Regent's Park, on June 27, 1924. It is of good size, of perfect exhibition form and delicious fragrance. There is rather more than a suggestion of apricot in the heart of the blooms, and but for this we anticipate that the variety would replace Frau Karl Druschki as the most popular white Rose in the garden. But it has great merits, both for garden decoration and for exhibition. Shown by Mr. George Lilley.

Rose Mrs. Herbert Nash.—A deep rose-pink H.T. variety, fully double and of considerable substance. Allied to the rich colour is greater fragrance than is usually found in a brightly coloured Rose. It is said to be of excellent habit, and free flowering. Shown by Messrs. Chaplin Bros.

Rose Lady Worthington Evans.—This is a showy garden H.T. Rose, which also has considerable value for house decoration. The blooms are of medium size, slightly flattish in shape, and the broad petals are of very bright, velvety crimson colour. The buds are very pretty, and the neat foliage is good and firm. Shown by Messrs. Alex Dickson and Sons.

Acidanthera candida.—A South African Irid which bears a general resemblance to a very slender Gladiolus. The flower spikes are about eighteen inches long and these bear a few white flowers which have unusually long, narrow tubes. The genus thrives under treatment similar to that afforded Ixias. Shown by Mr. W. van de Weyer.

Calceolaria pratensis.—The value of this Calceolaria will probably be greater in the rock garden than in the flower border. It was found in the foothills of the Andes and should probably be hardy under average winter conditions. The plants on show had neat rosettes of harsh, green leaves, and threw up plenty of erect, slender stems about a foot or more high, which bore large numbers of small, yellow flowers. The pouch of the flower is curiously flattened, almost as though deflated. Shown by Sir Wm. Lawrence.

Campanula persicifolia gigantea coronata Shirley.—This is a most ungainly name, which, if the variety becomes popular, could well be shortened. It bears tall stems of blue flowers, which appear to fade quickly. Shown by Messrs. B. Ladhams, Ltd.

Clematis quinquefoliata.—A Chinese species raised from seed collected by Wilson in the mountains north of Kui early in the present century. It is closely allied to C. Meyeniana but differs in having five leaflets instead of three and in bearing less numerous flowers. The long branches on show were particularly numerous and bore many small, milk-white flowers which were slightly fragrant. It is a very free-growing and handsome climber. Shown by Mr. E. M. Preston.

Deutzia scabra latifolia.—This is a welcome addition to the taller Deutzias. It appears to be much more vigorous than the species, and in addition to having larger leaves bears larger flowers of a clearer white. Shown by the Hon. Vicary Gibbs.

Dianthus Giant-flowered Frilled.—An excellent strain of annual Pinks of which the name well describes the habit and form of the flowers. It includes a number of lovely shades of colour. Shown by Messrs. J. Carter and Co.

Hemerocallis Winsome.—A very pretty Day Lily which, while not so large as some others, is very attractive in its clear canary-yellow colour. The buds are stained buff and this colour continues on the under sides of the outer segments. It is slightly fragrant. Shown by Mr. G. Yeld.

Ozothamnus rosmarinifolius.—This half-hardy shrub, which was introduced from van Diemen's Land in 1822, is common in the Riviera Districts of Cornwall and other warm parts of the country. The branches were particularly well-flowered. Shown by Sir Wm. Lawrence.

Phlomis fruticosa.—This very old inhabitant of our gardens was introduced from Spain over three hundred years ago, and is commonly known as the Jerusalem Sage. The bright yellow flowers were very attractive. Shown from the Cambridge Botanic Gardens.

Tithonia speciosa (syn. Helianthus speciosus).—This very showy Composite was the subject of a coloured supplement to the *Gardeners' Chronicle* of March 13, 1915. It is an annual species introduced from Mexico in 1833, and received an Award of Merit from the R.H.S. on October 7, 1913, and as the award is now duplicated there can be no doubts of the Committee's appreciation of the plant. The flowers illustrated in 1913 were grown in the open by Mr. Batchelor, at Towcester, while those of the present occasion appear to have been grown under glass. However, it is a very handsome flower of Rudbeckia appearance. The twelve or thirteen ray florets are of rich red colour, and the orange coloured disc is relatively small. Shown by Mr. J. B. Body.

Groups.

Delphiniums.

These handsome border perennials were the principal feature of the show and were shown in great excellence in several collections. Messrs. Blackmore and Langdon had a very large group well arranged against the wall. Most of the spikes were exceptionally large and included many desirable shades of colour. Those with dark shades of blue included Purple King, Robert Cox, and Fred Miles, with Blue Bird, Lady Beatrice Stanley, Col. Douglas, Edward Bromet, which has a distinct white eye, and Lizzie van Veen of medium blue colour. The fascinating lavender shade was represented in Glory, Phyllis, Triumph, Mrs. Shirley, and Nora Ferguson. Lord Derby is of uncommon rosy-purple colouring.

Messrs. Kelway and Son also showed a large number of excellent spikes of Delphinium, and although their collection suffered in the spectacular sense from its position this rendered it particularly easy for a close inspection of the many splendid varieties, which included Dusky Monarch, Smoke of War, Lord Fisher, a rich dark blue, semi-double; Bluebeard, semi-double, lavender; Splendour and Thundercloud. They also showed good Paeonies, especially Ethelreda and Dr. Bonavia, double rose, and Silvo, Paeony-flowered.

An interesting collection of standard varieties of Delphiniums was staged by Messrs. R. H. Bath, Ltd., who also had especially good, double-flowered Paeonies in Chas. Levaque, Solange and Couronne d'Or.

A fascinating exhibit of a new Delphinium named Mrs. W. J. Sanderson was made by Messrs. J. Burrell and Co. It is a graceful spike of Oxford-blue colour and the flowers have a distinct white eye. Mr. T. Bones included Luxor, dark blue and purple; Star of Langport, single light blue; Rev. Chas. Storr, semi-double, bright blue, and Clarissa in his collection of Delphiniums.

A gracefully arranged floor group of Delphiniums was contributed by Messrs. George Bunyard and Co. This exhibit included most of the best standard varieties, of which the following were very prominent: Lizy van Veen, Queen Mary, Mrs. A. J. Watson, Jessica, Minerva, and The Alake. The group was bordered with Campanula Fleur de Niege and C. pusilla. Delphiniums were associated with various alpines by Messrs. Bakers, Ltd., in whose group Hypericum fragile and Calceolaria polyrrhiza were very interesting. Messrs. Lowe and Gibson had Delphiniums and a few good border Carnations.

Miscellaneous.

Particularly good vases of Irises were arranged by Messrs. Barr and Sons. These were chiefly such named varieties of the English Iris as Grand Lilas, Sunset, Pollux, Duke of Clarence, and Blue Giant, but they also included bright vases of the yellow species Iris Mounieri, I. aurea, and I. monaurea. In association with the Irises were the useful hardy Chalcedonicum album and L. croceum; Campanulas and Gaillardias. Tall, graceful spikes of Eremurus Warei, E. Lemon Queen, various Delphiniums, and several splendidly grown pot plants of Saxifraga longifolia were displayed by Mr. J. C. Allgrove.

A fairly seasonal representative group of Campanulas was arranged by Messrs. Ladhams, Ltd. The tall varieties included the new Shirley and Queen of June. The double-white Fleur de Niege, Fairie Queene, lavender, and Holstii major, dwarf blue, were also attractive. In addition to the Campanulas there was a good collection of border Pinks. In a good group, Mr. T. Carlile displayed excellent plants of Tree Lupins Light of Loddon, Gaillardia Loddon hybrids, and Delphiniums.

In a corner group Messrs. Harkness, Ltd., set up splendid plants of their fine strain of Lupins. These were chiefly in shades of old gold and of rose, and were particularly attractive. The alpines and border plants shown by Messrs. R. Tucker and Sons included Bletia hyacinthina, Phyteuma comosum, dwarf Alliums, Campanulas, and Delphiniums. The last-named was also shown by Messrs. M. Prichard and Sons with Tritomas, Watsonia Ardernei, and an excellent collection of Japanese Irises in named sorts.

Erythraea Massonii, Campanula G. F. Wilson, Œnothera speciosa rosea, and a dwarf Thymus were associated with Delphiniums by Messrs. Waterer, Sons and Crisp. Campanula persicifolia The Favourite was freely shown by Messrs. W. J. Godfrey and Son, who again had an interesting collection of Show and Fancy Pelargoniums.

A well-designed rockery was appropriately planted by Mr. F. G. Wood. Two dwarf Œnotheras, Œ. speciosa rosea and Œ. mexicana rosea attracted a deal of attention. At one end of the rock-garden exhibit Mr. Wood showed various flowering shrubs. Lupins were the principal feature of an interesting exhibit by the Chalk Hills Nursery Company, who also showed splendid batches of Coreopsis grandiflora, Armeria Bee's Ruby, Achillea Cerise Queen and the double-flowered Ryburgh Poppies.

A valuable collection of Philadelphus shown by Mr. Charles Turner included Virginal and Albarte, doubles; Pavilion Blanc, Norma and P. grandiflora, singles. Messrs. L. R. Russell, Ltd., had a group of Clematis in variety, Corokaea virgata and other hardy shrubs.

Roses and Sweet Peas.

Several large stands of Rose Shot Silk in the admirable collection of Messrs. Alex. Dickson and Sons drew attention to the great decorative value of that variety and other Roses of merit were Scarlet Glory, George H. Mackereth, Mrs. Henry Bowles, Lady Inchiquin and Ethel Somerset. Mrs. Courtney Page, Admiration, Vesuvius and Gwyneth Jones are the names of a few of the Roses shown by Messrs. S. McGredy and Sons.

Mr. George Lilley gave the central position in his collection of Roses to Marcia Stanhope which received an Award of Merit. He also showed excellent blooms of Mrs. E. J. Hudson, an H.T. of perfect form and rich pink colouring, and Lucy Constable. The Rev. J. H. Pemberton showed attractive vases of Bertha Turner, Marion, Mrs. Henry Morse, Independence Day, and other good varieties. Golden Emblem was a prominent variety in the collection of Roses arranged by Messrs. B. R. Cant and Sons, who also showed The Queen Alexandra Rose, Betty Uprichard, Lady Roundway and Sovereign.

Sweet Peas of considerable merit were staged by Messrs. Sutton and Sons and Messrs. Dobbie and Co. From the first-named we selected Lucifer, deep salmon-cerise; Comrade, pale cream-pink; Hebe, frilled rose-pink; Charming, The President Harding, cerise overlaid with peach-pink; Pimpernel, vivid scarlet; Royal Rose, large rose-red; Helen Lewis, frilled orange-pink; King Manoel, deep maroon; Gloriosa, fiery orange-scarlet; Lavender George Herbert, and Mrs. Arnold Hitchcock, salmon-pink on cream ground.

The chief sorts in Messrs. Dobbie's large collection were Crimson King, of intense colouring; Daffodil, cream; Miss California, cream-pink; Gloriosa, Jean Ireland, cream edged with rose-pink; Mrs. Cuthbertson, rose and white; Orchid, lavender; Renown, rosy-carmine; Sunset, rose and cherry-red; Warrior, maroon; Grenadier, scarlet; Ruby, and Youth, white edged with rose.

Greenhouse Carnations were shown by Messrs. Stuart Low and Co., Mr. C. Engelmann, and Messrs. Allwood Bros. Prince of Wales, rich rosy heliotrope, White Pearl and Princess of Wales Malmaison Carnations were shown by Messrs. Stuart Low and Co., who also staged floriferous plants of Metrosideros floribunda and Hydrangeas. Mr. Engelmann had large vases of Carnations Laddie, Red Laddie, Tarzan, Wivelsfield Pink and other good sorts. In addition to a selection of greenhouse Carnations, Messrs. Allwood Bros. showed many varieties of Dianthus Allwoodii.

Fruit and Vegetable Committee.

Present:—Messrs. C. G. A. Nix (Chairman), J. Cheal, Geo. F. Tinley, H. Markham, F. Jordan, E. Neal, J. C. Allgrove, E. A. Bunyard, A. Metcalfe, E. Beckett, A N. Rawes and E. Laxton.

On this occasion Messrs. Bunyard and Co. offered medals for Strawberries, but only one exhibit was forthcoming, It was shown by J. A. Nix, Esq., Tilgate, Crawley (gr. Mr. E. Neal), who had ten excellent boxes of fruits, six of the variety Royal Sovereign, and two each of The Duke and King George respectively. A Silver Bunyard Medal was awarded the collection.

Messrs. Laxton Bros. showed twelve dishes of Strawberries for which a Silver Hogg Medal was recommended. The varieties were

Sir Douglas Haig, Bedfordshire Champion, Robust, a large, conically-wedged shaped fruit of a rich crimson colour; Titbit, one of the finest of the new Strawberries for flavour and said to do exceptionall well in the north; Bountiful; Majestic, a new main crop variety said to have a good constitution and of prolific cropping qualities; The Duke, one of the best of the new early Strawberries and King George, a good main crop variety, ripening a little earlier than Royal Sovereign.

Obituary.

Henry Stevens.—It is with deep regret we record the somewhat sudden death of the veteran auctioneer of King Street, Covent Garden, Mr. Henry Stevens, who died on Thursday, June 11, from pneumonia, at Addlestone, Surrey, aged eighty-three. Mr. Stevens was head of the firm of Messrs. J. C. Stevens, of 39, King Street, Covent Garden, where for the past fifty years he had conducted sales of almost every conceivable object, including Orchids, bulbs and other horticultural subjects. A detailed account of Mr. Stevens' career was given in *The Gardeners' Chronicle* of February 23, 1924.

NEW HORTICULTURAL INVENTIONS.

LATEST PATENT APPLICATIONS.

14986.—Adelantado, L.—Manufacture of phosphate fertiliser. June 9.
14297.—Holmes W. F.—Appliances for trimming edges of lawns, etc. June 2.
13739.—Howaldt, F.—Garden shears. May 26.
14086.—Mackensen, F.—Strips of sheet metal for weeding. May 29.
13269.—Bull, G. F.—Lawn mowers, etc. May 21.
13472.—Starling, O. A.—Implement for hoeing and thinning Sugar Beet, etc. May 23.

SPECIFICATIONS PUBLISHED THIS MONTH.

234,717.—Penney, F., and Robertson, J. E. Garden shears for grass cutting.
234,225.—West, C. E. Plant support.
234,269.—Talbot, F. C. Device for gathering fruit from trees.
233,075.—Lang, A. A. D. Means for supporting cut flowers and the like.

ABSTRACT PUBLISHED THIS MONTH.

Safety Razor Pruner. *Patent No.* 231999.

A novel pruning tool utilising a safety razor blade for cutting has been devised by Mr. Vansittart, of Redholme, Lyminge, Kent. The tool consists of a rod slidably mounted on a handle and a clamp holder having pins for holding a flat razor blade, the holder being attached to one end of the rod so that the blade projects beyond the handle with its edge substantially at right angles thereto; the end of the handle adjacent the blade has a lateral projection which co-operates with the blade to cut an article when the blade is moved towards the handle. The rod may be mounted in a tubular handle and have a knob projecting through a slot therein for operating the blade. In a modification the blade has an inclined edge and a projection on the rod is engaged by a slotted actuating lever pivoted to the handle.

This list is specially compiled for *The Gardeners' Chronicle*, by Messrs. Rayner and Co., Regd. Patent Agents, of 5, Chancery Lane, London, from whom all information relating to Patents, Trade Marks, and Designs, can be obtained gratuitously.

Messrs. Rayner and Co. will obtain printed copies of the published specifications and forward on post free for the price of 1s. 6d. each.

ANSWERS TO CORRESPONDENTS.

ARSENATE OF LEAD: *W. J.* Arsenate of lead is a deadly poison, and should not be used on trees overhanging soft fruits or vegetables anywhere near the time when the latter are to be used. It is generally considered that it should not be applied within a month of the consumption of any crops. There is at least one non-poisonous caterpillar wash on the market which may be used instead. Any soft fruits known to have received some of the arsenate of lead should be washed before use.

CUCUMBER DISEASED: *A.B.C.* The Cucumber root is suffering from what is commonly known as "Collar Rot," caused by Bacillus carotovorus, and a species of Fusarium. The first of these two organisms rarely attacks Cucumber plants unless the beds are too wet. The pouring of water over the neck of such plants as Melons and Cucumbers should always be avoided, because this procedure leads to infection by soft rot producing organisms such as Bacillus carotovorus. The fungus Fusarium sp. would seem to have entered the plant through the rotted areas caused by the first organism. As a method of control water the roots and diseased portions of the stem with a solution of "Cheshunt compound" at the rate of two pints per plant, followed by dusting the diseased areas with a powder of the following composition:—Ten parts dried slaked lime, two parts flowers of sulphur and two parts finely ground copper sulphate. The watering should be carefully attended to and the beds should not be allowed to become too wet. There is no means of saving plants which are badly infected.

CLEANING A TURF BANK: *Bunkered.* It is quite easy to make the turf bank respectable and suitable for a flower bank, unless it contains much buried Couch Grass, or the common field Bindweed. Operations should be commenced now while the weather is dry and warm. With a spade dig over the bank about six inches deep, and when a part of it is done, get a fork and commence beating the sods to separate the soil from the weeds. Shake out the latter with the fork to the full depth of the sods and spread out the weeds to dry in the sun for a few days, after which they will burn quickly when gathered together and set alight. Avoid the usual practice of laying them in heaps at first and trying to burn the green stuff. If the whole bank is completed during June and July it will be easier to get rid of the weeds than in winter. Any few pieces that have been missed will grow up again between now and autumn, so that you can see where to fork them out. To prevent creeping weeds, such as Couch Grass, from growing through the fence from your neighbour's side, it would be worth while to sink a line of slates or boards on their edges to their full depth in the soil, close up to the fence. No doubt the soil is full of seeds, and they will keep germinating for a few years every time the soil is stirred; but if you persevere for a time in pulling them up before they run to seed, it will be an easy matter to keep the bank clean afterwards.

INSECTS ATTACKING BROAD BEANS: *A. M* The holes in the Broad Bean seeds have been made by the Bean Weevil, Bruchus granarius. The eggs are laid on the flowers by a small, black beetle or on the setting of the pods early in the summer. When the eggs hatch the maggots eat their way into the Bean and, subsequently, become chrysalids, generally remaining in the seed until the following spring. As the seeds are so large, it is an easy matter to discard any that have holes, and to plant only sound ones.

NAMES OF PLANTS: *A. G.* Send in flower. *A. P. G.* 1, Muscari comosum var. monstrosum; 2, Fabiana imbricata; 3, Gaultheria procumbens; 4, Polygonum affine; 5, Phlomis fruticosa; 6, probably a form of Potentilla fruticosa; 7, probably Rhododendron ferrugineum; 8, Menyanthes trifoliata; 9, Lepidium Smithii. *W. R. B.* Saxifraga granulata fl. pl. *G. P.* 1, Weigelia rosea; 2, missing; 3, Olearia dentata?; 4, Abelia ruprestris; 5, shrivelled, probably a Rock Rose. *A. J. H.* 1, Philadelphus Serbe de Neige; 2, P. Voie lactae; 3, Viburnum species; 4, Achillea Ptarmica.

MUSHROOM HOUSE: *W. E. Y.* The internal fittings of your Mushroom house may be of slate or wood; an earthen floor is the best. You should allow a space of about three feet above and between the beds, and the roof should be match-boarded under the rafters. Fix joists three inches or four inches square into the walls back and front at regular distances apart, fixing these to a joist of the same size running either side of the path. The boards or slabs used for the sides and bottoms should be constructed so as to be easily removed for cleansing purposes when not in use, at which times the shed should be lime-washed and thrown open until again required. Beds are best made on the floor of the house, especially from June to September; a depth of eight inches or nine inches of fermenting material is sufficient for these months. The top beds may be made twelve to fifteen inches deep during the winter, sloping them slightly from the back. Spawning should be done when the heat of the bed has declined to 75°, and at a depth of two inches or three inches. Good loamy soil containing plenty of fibre is the best material for covering the beds and should be placed to a depth of two inches. A slight current of air may be allowed to pass through the house, unless the outside temperature falls below 50°. Maintain an even temperature of about 58°, and supply the necessary moisture by lightly syringing the walls and paths of the house.

TO KEEP DOWN NETTLES AND WEEDS: *Sydney Pitt.* Nettles may be greatly weakened by cutting them close to the ground about the middle of June. It has been proved that they can be killed in a single season by repeatedly cutting away all the foliage, after the first cutting about mid-summer. This would be easy with a grass hook, if the ground is fairly level. Trees or shrubs would have to be very dense to keep down Nettles, because they are now three to five feet high amongst bushes on river banks. The rough land mentioned may be beautified and the Nettles hidden and weakened by planting and by cutting the Nettles close down once a year at the time stated. Beautiful early flowering Willows are Salix daphnoides and S. gracilistyla (often listed as S. mutabilis). Strong-growing flowering shrubs that thrive in damp soils are Viburnum Opulus sterile (Snowball Tree), Spiræa salicifolia, S. s. paniculata alba, S. Douglasii, S. discolor, Cornus alba (red shoots in winter), and hardy hybrid Rhododendrons. All the above will grow in ground that remains wet most of the season; but if Nettles thrive, many other showy subjects will be equally successful. If the soil is not full of stagnant moisture it would be safe to plant Pyrus floribunda, P. purpurea, P. John Downie, Ribes sanguineum, Berberis vulgaris, Buddleia variabilis, Philadelphus coronarius, P. grandiflorus, Deutzia scabra candidissima, Forsythia suspensa and Weigela Eva Rathke.

Communications Received.—J. S.—G. T. F.—E. E. S.—H. D.—A. B.—C. L. C.—D. L. N.—T. D. & S.—E. M.—A. B., M. C. R.—J. N. M.—K. D.—W. M. & S.—B. R.

MARKETS.

COVENT GARDEN, Tuesday, June 23rd, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz.	10 0–13 0
—elegans	10 0–12 0
Aralia Sieboldii	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri	12 0–18 0
Aspidistra, green	36 0–60 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray, —12's, 15's	5 0– 7 0
Crassulas, 48's per doz.	24 0–30 0
Crotons, per doz.	30 0–45 0
Cyrtomium	10 0–25 0
Hydrangea White, 48's per doz.	18 0–30 0
—Pink, 48's per doz.	18 0–24 0

	s. d. s. d.
Hydrangea	
—Blue, 48's per doz.	30 0–48 0
Marguerites, white, 48's per doz.	15 0–18 0
Mignonette, 48's per doz.	15 0–18 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia	30 0–48 0
—60's	15 0–18 0
Pteris, in variety	10 0–15 0
—large 60's	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 0
Rhodanthe, 48's per doz.	8 0–10 0
Roses, Polyantha, 48's per doz.	18 0–24 0
Verbenas, 48's, per doz.	12 0–15 0
Viscarias, 48's, per doz.	15 0–18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	9 0–10 0
—cuneatum, per doz. bun.	6 0– 8 0
Asparagus plumosus, per bun.	
long trails, 6's	2 0– 3 0
med. sprays	1 6– 2 6
short „	0 9– 1 3
—Sprengeri, per bun.	
long sprays	1 6– 2 0
med. „	1 0– 1 6
short „	0 4– 1 0
Carnations, per doz. blooms	2 0– 3 0
Chrysanthemum maximum, doz. bun.	3 0– 6 0
Coreopsis, per doz, bun.	3 0– 4 0
Cornflower, per doz. bun.	1 6– 2 0
Croton leaves, var. doz. leaves	0 9– 2 6
Delphiniums, various, per doz. spikes	2 0– 5 0
Fern, French, per doz. bun.	0 9– 1 0
Gaillardia, per doz. bun.	4 0– 5 0
Galax, American, green and bronze, per doz. bun.	— 1 0
Gardenias, per box, 12's, 18's	4 0– 6 0
Gladiolus, Blushing Bride, per doz. bun.	10 0–15 0
—White, per doz. bun	9 0–12 0
—Peach Blossom, per doz. bun.	9 0–12 0
—primulinus, per doz. spikes	1 6– 2 0
Halley, per doz. spikes	3 0– 5 0
—Prince of Wales, per doz. spikes	4 0– 5 0
—Scarlet, per doz. spikes	4 0– 5 0
—Cream, per doz. spikes	3 0– 4 0
—Giant White, per doz. spikes	4 0– 5 0
Gypsophila, white, doz. bun.	6 0– 9 0
Iceland Poppies	1 6– 2 6
Iris, English per doz. bun.—	
—Blue	9 0–12 0
—Mauve	9 0–12 0
—White	9 0–12 0

	s. d. s. d.
Lapagerias, per doz. blooms	3 6– 4 0
Lilium longiflorum long, per doz.	3 0– 4 0
—speciosum rubrum, long, per doz. blooms	4 0– 5 0
—short „ „	3 0– 5 0
Lily-of-the-Valley, per doz. bun.	24 0 30 0
Nigella, Blue, per doz. bun.	6 0– 9 0
— per doz. bun.	3 0– 4 0
Orchids, per doz.	
—Cattleyas	24 0–36 0
—Cypripediums	5 0– 7 0
Paeonies, White per doz. bun. 6's	9 0–12 0
—Pink, per doz. bun. 6's	9 0–12 0
—Red, per doz. bun. 12's	9 0–12 0
Pinks, Her Majesty, per doz. bun.	4 0– 6 0
—Mrs. Sinkins, per doz. bun.	3 0– 3 6
Richardias (Arums) per doz.	5 0– 6 0
Roses, per doz. blooms, Richmond	2 0– 3 0
—Liberty	2 0– 3 0
—Madame Butterfly	2 0– 4 0
—Mme. Abel Chatenay	1 6– 2 6
—Melody	2 0– 3 0
—Molly Sharman Crawford	2 6– 4 0
—Ophelia	2 6– 3 0
—Sunburst	2 0– 3 0
Scabiosa caucasica, per doz. bun.	4 0– 5 0
Smilax, per doz. trails	3 0– 3 6
Statice, mauve	9 0–12 0
Stephanotis, per 72 pips	2 6– 3 0
Stock, English white	9 0–18 0
Sultan White, per doz. bun.	6 0– 8 0
Sweet Peas, per doz. bun.	5 0–12 0
Violas, per doz. bun.	1 0– 1 6

REMARKS.—Since Friday last the quantities of all outdoor blooms have been greatly reduced on account of the dry weather. Pyrethrum are practically finished. White Stocks and Pinks are more in demand, but these, like other subjects, are much firmer in price owing to a limited supply. Small consignments of Achillea The Pearl are being received, this flower being the newest subject in this department. Sweet Peas are also insufficient for present requirements. Amongst indoor blooms there is little change to note from last week. Lilium longiflorum is going out freely owing to the good quality and moderate price. L. lancifolium album may be on sale again in a few days, also L. l. rubrum. There is a limited supply of Lily-of-the-Valley. The quantities of Carnations are sufficient for present requirements. Roses do not show any improvement on last week; the majority of the blooms are very medium in quality. Outdoor varieties include General McArthur, Mrs. Sharman Crawford, Mrs. J. Laing and Frau Karl Druschki; these are the principal sorts so far on sale. Spanish Irises are practically over for the season: small consignments of English Irises are taking their place. Amongst Gladioli The Bride (White) is the most plentiful. The large-flowered varieties now consist of G. primulinus in two or three sorts, Salmonea, and Maiden's Blush. The Giant varieties are Hermione, Halley, Prince of Wales, Brimstone, also some excellent spikes of scarlet and yellow; also Giant White. If hot weather continues, all supplies will be considerably reduced before the end of this week and a further advance in prices is expected.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—London Pippin	17 0–18 0
New Zealand—	
—Jonathan	17 0–20 0
—Sturmer	19 0–21 0
—Statesman	19 0–21 0
Tasmanian—	
—Jonathan	16 0–19 0
—Cleo	18 0–20 0
—Sturmer	19 0–20 0
—Others	14 0–17 0
Bananas	16 0–27 6
Cherries, French, per box	1 6– 2 6
—English	18 0–21 0
—Dutch	14 0–18 0
Figs (Forced) doz.	3 0–12 0
Gooseberries, per ½ sieve	5 0– 7 0
Grapes—	
—Belgian	1 9– 2 6
—English—	
—Hambro, per lb.	2 0– 4 0
—Muscat	4 0– 8 0
—Canon Hall	5 0–10 0
Grape Fruit, Cuban	40 0–42 6
—Jamaica	40 0–42 6
—Florida, finest	45 0–50 0

	s. d. s. d.
Lemons, Messina, per box	12 6–16 0
—Murcia	16 0–25 0
—Naples	22 6–30 0
Mandarines	5 0– 6 0
Melons (Forced)	3 0– 6 0
Nectarines, per doz.	18 0–24 0
Oranges, Jaffa	16 0–18 0
—Spanish—	
—300's	32 0–40 0
—360's	30 0–40 0
—504's	30 0–35 0
Peaches, English per doz.	7 6–24 0
Pines	4 0– 6 6
—South African	7 0– 8 0
Plums, Spanish, per crate	8 0–12 0
Spanish Apricots—	
—per ½ sieve	9 0–15 0
—per crate	6 0–10 0
Strawberries—	
—Southampton, 2 lb.	1 0– 2 0
3 lb.	3 0– 7 6

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Asparagus—	
—Evesham	4 0–15 0
—Devon	8 0–10 0
Beans, Guernsey, per lb.	1 0– 1 6
—Worthing	1 0– 1 6
Beets, per cwt.	5 0– 8 0
Broad Beans, per bushel	2 6– 4 0
Cabbage, per tally	8 0–12 6
Canary Island Tomatos	18 0–22 6
Cauliflowers, per doz.	2 6– 6 0
Carrots, new, per doz. bun.	8 0–10 0
Cucumbers, per doz.	5 0– 6 0
—Flats, 36's, 42's	10 0–18 0
Dutch Onions	11 0–12 0
Endive, per doz.	2 6– 3 0
Greens, best, per bag	4 0– 5 0
Horseradish, per bundle	2 0– 2 6
Lettuce, Cos, doz.	1 6– 3 6
—Cabbage Lettuce,	2 0– 3 0
Mushrooms, cups	2 0– 2 6
—broilers	1 3– 1 9
Marrows, doz.	4 0– 5 0

	s. d. s. d.
Onions, Egyptian, per bag	10 6–12 0
—English, per cwt.	12 6–14 0
—Spring per doz.	2 6– 3 0
Parsnips, per cwt.	3 0– 4 0
Peas, English per bushel	6 0–10 0
—½-bag	8 0– 9 0
Potatos, Canary Island	10 0–12 0
Potatos, per ton—	
—Old, per cwt.	5 0– 7 6
—English, per bushel	6 0– 7 0
—St. Malo, per cwt.	10 0–10 6
—New Guernsey, per cwt.	10 0–12 0
—Jersey, per cwt.	10 0–12 0
Radishes—	
—Round	1 0– 2 0
Rhubarb, per doz.	7 0– 9 0
Spinach, per bushel	3 0– 4 0
Tomatos, English, per lb.—	
—Pink	7 0– 7 6
—Pink & White	7 0– 7 6
—White	6 0– 6 6
—Blue	6 0– 6 6
—Guernsey	7 0– 7 6
Turnips, new, per doz. bun.	8 0–11 0

REMARKS.—Strawberries, as usual, have to some extent affected the demand in several sections. The period of fine weather has been very helpful in encouraging an increased consumption of fruit and conditions all round have been satisfactory. Australasian Apples are quoted lower and heavy stocks are on hand. Choice fruits, such as Melons, Figs, Peaches, Nectarines, and Grapes have met a fair reception by buyers, and prices keep at a good level. English Gooseberries are plentiful, but Gooseberries from Holland are cheap and are an important competitor. Apricots and Plums from Spain are a good market. English Cherries are beginning to arrive and are selling well. French Cherries are in variable condition. Cherries from Holland are selling freely. The dry weather has been responsible for short supplies of Peas and in consequence Asparagus and French Beans have sold well at firm prices. Tomatos are numerous and their prices lower, but at the time of writing there seems to be some improvement. Cucumbers continue to be a good trade. New Potatos are a better business after a slack period. Green vegetables are dearer; salads are moving freely.

GLASGOW.

A LITTLE improvement was reflected in the conditions prevailing in the cut-flower market last week. Supplies continued heavy and checked any material recovery in prices until Friday, when the general tone was firmer. Values were lowest in mid-week, and the arrival of English-grown Irises, Sweet Peas, and Pyrethrums in a heated state gave buyers an opportunity of controlling rates. There was quite a glut of Gypsophila, salesmen receiving an average of 100 boxes per day which realised from 2d. to 4d. for small bunches and 1/- to 1/3 for large. Carnations were cheaper at 2/- to 3/6 all colours, while Richmond Roses were worth from 8d. to 2/-, Mrs. H. Stevens and Madame Abel Chatenay from 1/- to 2/6, and Madame Butterfly 3/6 to 4/-. Paeonies made 1d. to 2d. per bloom, and Lilium grandiflorum (Harrissii) 2/- to 3/-. Good Iris blooms (Innocence, King of the Blues, and King of the Yellows) fluctuated between 1/6 and 1/9, and smaller blooms between 9d. and 1/-. Baillie's Sweet Peas sold at 1/3 for 18's, Bennie's 9d. and 10d. for 12's; other local growers' blooms 6d. to 1/-, English 2d. Single red Pyrethrums averaged 2/6, and white 4/-. Marguerites were worth 2/6 to 3/-, Asparagus from 1/- to 1/3, Trails 1/9 to 2/-, Smilax 2/-, double-white Narcissi 2/-, Lily-of-the-Valley 2/9, and Iceland Poppies 4d. per bunch of 3's. Gladioli The Bride were plentiful, and were as low as 3d. per bunch, but the average worked out at 6d. to 8d. Maiden's Blush and Prince of Wales were worth 1/6 to 1/9, No. 1 red 1/3 to 1/6, and salmon 2/- to 2/3.

Bedding-out plants were scarce, as the season is now over, but pot plants were plentiful, although the varieties were not so numerous. Spiraeas made 1/6 per pot, Hydrangeas 1/- to 2/6, Marguerites (five-inch pots) 8d. to 10d. each, small 2/- per dozen, Fuchsias 2/- to 2/6 each, Begonias 6/- per dozen, small Ferns 2/6, and Geraniums 3/- to 12/-.

In the vegetable market the consumption of salads declined with the prevalence of cooler weather, and prices were lower all round. Scotch Lettuce ranged from 2/6 to 3/6, English 3/- to 3/6, and Dutch 1/9 to 2/6, Radishes from 2/- to 3/-, and Cucumbers from 5/- to 7/6 per dozen. Prices for Tomatos were exceptionally firm. The first consignment of Tomatos from Kirkentilloch made 1/9 per lb. on Tuesday, and Scotch produce averaged 1/2 to 1/6, English 12/6 to 13/6 (12-lb.), Guernsey 11/6 to 13/-, and Dutch 11/6. Cauliflowers were worth 4/- to 5/6 per dozen, Asparagus 4/6 to 6/- per bundle, Peas 10/- per pot, French Beans 6d. per lb., Mint 2/- to 4/-, Teneriffe Potatos 11/- per case, and Jersey Potatos 16/- per cwt.; Carrots and Turnips averaged 10d. to 1/- per bunch.

Interest in the fruit department was accentuated by the arrival of new season's produce. Pines sold from 3/- to 5/- each, house Melons 3/6 to 5/6, Gage Plums 13/- per boat, and Apricots 12/- per crate. Consignments of Southampton and Wisbech Strawberries are increasing daily and it is expected that supplies will reach a maximum next week. The former realised from 2/6 to 3/- per chip and the latter from 3/- to 3/3. English Cherries were worth 24/- and French 16/-, Black Hamburgh Grapes 3/- to 4/6 per lb., home-grown Peaches 18/- to 24/- per doz., Scotch and English Gooseberries 4d. and 4½d. per lb., Dutch 2d. Murcia Oranges, all counts, realised from 36/- to 45/-, Burreana 300's and 240's, 28/6 to 34/-, 200's, 360's and 504's, 26/- to 36/-. Grape Fruit, 80's 36/-, and 64's 34/-. Australian fruit is becoming scarce and the only Pears on sale were Winter Nelis, for which 14/- to 16/- per tray was paid. Although the quality of Apples has depreciated, Cleopatra made from 22/- to 24/-, Jonathan 22/- to 23/-, and Sturmer Pippin 20/- to 22/-.

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SUPPLEMENT PLATE: Vuylstekeara Aspasia var. polysticta.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841
No 4384

No. 1984. VOL. LXXVII. (THIRD SERIES) SATURDAY, JANUARY 3, 1925. Registered as a Newspaper (with Supplement) PRICE 6d. POST FREE 7d.

SUBSCRIPTIONS—Inland or Foreign 30/- per annum, post free. *Entered at New York Post Office as second-class matter.*

Postal Address—5, Tavistock Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

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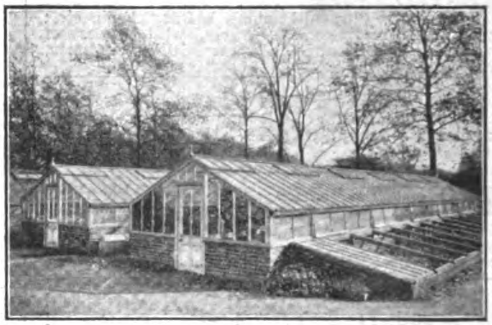

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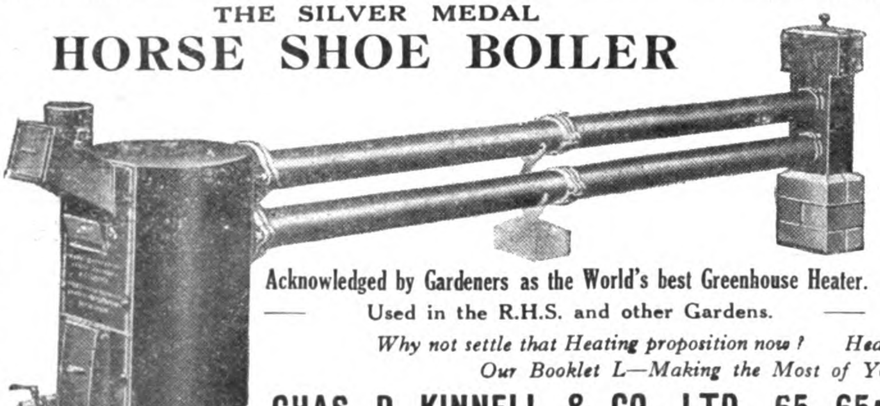

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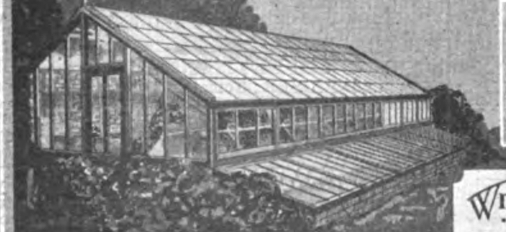

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Printed by H. M. Pollett & Co., Ltd., Fann Street, London, E.C. 1, and published weekly by The Gardeners' Chronicle, Ltd., 5, Tavistock Street, Covent Garden, W.C. 2, Saturday, January 3rd, 1925.

JUL 9 1925
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THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No 4409

No. 2009. VOL. LXXVII. (THIRD SERIES) SATURDAY, JUNE 27, 1925. Registered as a Newspaper. PRICE 6d. POST FREE 7d.

SUBSCRIPTIONS—Inland or Foreign 30/- per annum, post free. *Entered at New York Post Office as second-class matter.*

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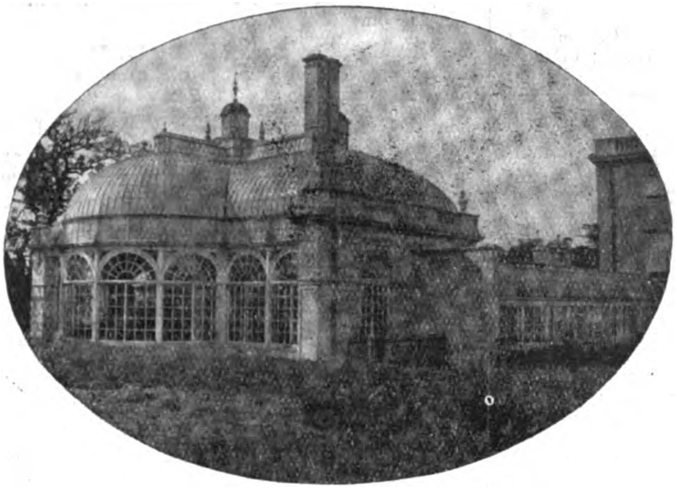

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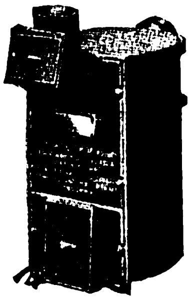

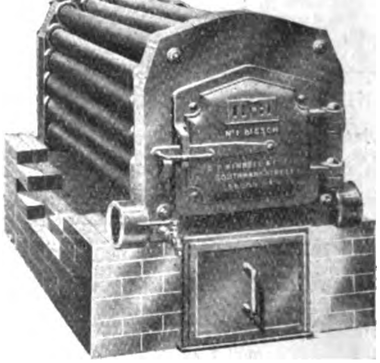

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